

# FLIGHT

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AND AIRSHIPS

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## DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list:—

- 1932
- May 14. Coventry Ae.C. Air Pageant.  
May 14-15. Skegness Air Pageant.  
May 16. Northamptonshire Ae.C. Annual Pageant.  
May 16. Hertfordshire F.C. Air Display at Wheathampstead.  
May 16. Shanklin Flying Display.  
May 16. Southend F.C. Air Display.  
May 16. Air Display at Wallingford Aerodrome.  
May 18. Household Brigade Flying Club Meeting, Heston.  
May 21. "Morning Post" Cross-Country Air Race, Heston.  
May 21-23. Scottish Flying Club Display, Moorpark, Renfrew.  
May 22-30. Conference of Transoceanic Aviators at Rome.  
May 25. Opening of Royal Tournament, Olympia.  
May 26. "New Methods of Research in Aeronautics," Wilbur Wright Memorial Lecture, by H. E. Wimperis, before R.Ae.S.  
May 28. London-Newcastle Air Race for "Newcastle Evening World" Trophy.  
May 27-28. G.A.P.A.N. Civil Air Display, Brooklands.  
May 31. R.A.F. (Middle East) Dinner at R.A.F. Club.  
June 4. Henly's Rally and Gymkhana, Heston.  
June 4. Bristol Airport Summer Flying Meeting.  
June 4. Leicester Ae.C. Flying Display and Motor Gymkhana at Ratcliffe Aerodrome.  
June 7. Junior Ae.C. Dinner at Ham Bone Club, W.  
June 11. Close of Royal Tournament, Olympia.  
June 12. Herts and Essex Ae.C. Meeting at Broxbourne.  
June 12. Ae.C. of Germany Air Pageant at Tempelhof.  
June 17-18. Night Flying Display at Ratcliffe Aerodrome.  
June 18. Hull Air Display.  
June 18. Reading Ae.C. At Home, Woodley Aerodrome.  
June 21. Aero Golfing Society: "Flight" Challenge Cup. Bramshott G.C.  
June 21-28. Blackpool Air Pageant, Stanley Park.  
June 25. R.A.F. Display, Hendon.  
June 25-26. International Tourist Rally, Boulogne.  
July 8-9. King's Cup Air Race, start and finish Brooklands.  
Aug. 19-21. Fourth Annual Canadian Air Pageant, St. Hubert, Que.  
Nov. 25-Dec. 11. Paris Aero Show.

## EDITORIAL COMMENT



IN spite of the ideal set up before us by Professor B. Melvill Jones of Cambridge some years ago, with what he termed the ideal streamlined aeroplane, in which there should be surface or skin friction only on such components as were not actively concerned with lift, it is found, if one looks around at the world's aviation work, either via the foreign technical Press or through any other means at one's disposal, that but little serious progress has been made. Certainly there has been a general tendency of recent years towards a "cleaning up" of aircraft. The unsightly and drag-producing excrescences which marred the appearance and the performance of aircraft ten years ago are disappearing with becoming modesty into the interior of the machine, and the components which *must* project are now given better shapes, while the subject of interference drag is being given much more attention than was formerly the case. But all these things can legitimately be classed as mere detail refinements. Of attempts to alter radically the general conception of an aircraft there have, on the whole, been but few successful cases.

Those which come readily to mind include the "tailless" aeroplane (such as the Westland-Hill "Pterodactyl" and a few German experimental machines) and the aeroplane with retractable undercarriage, of which the United States have produced a number, while in France Blériot has been experimenting with a monoplane in which this feature is incorporated. The tailless machine should have a lower drag than the orthodox, as the drag of a separate tail is avoided, and because, when designed as a pusher, the smaller *nacelle* is not in the airscrew slipstream. The aeroplane with retractable undercarriage scores, of course, very considerably also, since the drag of the exposed undercarriage may be anything from 15 to 20 per cent. or so of the total drag. That the drag reduction has to be paid for in extra weight and complication goes without saying, and it is likely that in several instances the net gain is so small as to make the scheme hardly worth

while. That the aeroplane with retractable undercarriage will come we have no doubt. But we very much doubt that it will come in the form of an adjunct to the orthodox aeroplane of to-day. Rather do we think it will be used in conjunction with a design differing in several respects from those to which we are accustomed. In other words, the disappearing undercarriage will be made the fundamental feature, and not an "afterthought."

When we have reduced our fuselage to its form of lowest drag, or suppressed it altogether as in Professor Junkers' *nurflügel* (wing-only or all-wing aeroplane), and when we have tucked our undercarriage away inside, out of the draught, and when we have done away altogether with our tails, there are still improvements possible in the wing itself. We may alter its camber, we may change its span, we may vary its area, or we may discover ways of doing all these, so that, theoretically at least, even the all-wing machine of fixed area with, perhaps, a maximum lift over drag ratio of 20, does not represent the maximum efficiency at which we may aim. The all-wing machine of variable area would have a very low minimum drag indeed, which could be used either for flying with very little power expenditure or at very high speed.

At the worst we may never attain that ideal, and at the best it may be many years before we do. But it is worth while to look at the ideal occasionally, even if to do so only makes us dissatisfied with our present progress. When one comes to think of it, it is rather absurd to carry about exposed in the slipstream an undercarriage requiring from one-sixth to one-quarter of our horse-power, merely because we are compelled to use it for a few seconds on taking off and landing. And it is equally unreasonable to drag through the air the size of wing we require for the same purposes through every mile of our flying, if means could be found to reduce that wing area to something of the order of one-half during ninety per cent. of our flying.

We do not for one moment underrate the difficulties. They are enormous. Some of them *may* be insurmountable. Some of them certainly are not. The development of the future will probably not be the design of a machine incorporating all these features. It is far more likely that each feature will be thoroughly tried out on one or more machines, and that not until that has been done will it be practical to attempt to combine them in one aircraft. But because all these contribute something towards making aviation "fly it itself," each of them is worth studying. It may be that each is of no great practical value in the particular form or on the particular aeroplane with which the experiment is made. But if one scores only a small gain on each, and then

later on all can be used on one machine, the cumulative effect may well be such as to put flying in a position of which we do not to-day even dream.

In this week's issue we publish a description of a German Professor's contribution towards the variable area, variable camber wing. It may be that on the particular machine the net gain is not great. It may not even be the best way to set about the problem. We personally doubt that it is. By way of comparison we publish such brief particulars as are available of a French machine, in which the span and area are variable. Aerodynamically that promises to be a more logical line of attack, since induced drag depends on span loading. But it may be that the net gain is equal in the two machines, in other words that the variable chord and camber wing, although it does not give as great aerodynamic advantages, gets its gain for a smaller increase in weight and complication. One would hesitate to express any very definite opinion, especially in the absence of very complete data. But both the German and the French scheme does at least indicate an attempt at something better than, at present, we have.

The variable camber has perhaps been used to a greater extent in Great Britain than in any other country in the world. For many years the Fairey aeroplanes were provided with trailing edge flaps, which could be raised and lowered by the pilot to give a reflex wing section or a deeply-cambered section. Originally it was designed to give a lower landing speed. More recently it has been found, as explained by Capt. Norman Macmillan in an article in *THE AIRCRAFT ENGINEER* (Monthly Technical Supplement to *FLIGHT*), that the camber gear had a considerable effect on cruising speed efficiency in enabling the aircraft to be flown at a more efficient fuselage angle. A flap gear obviously cannot provide an ideal wing form. The change in section at the trailing portion is too sudden. But the operating gear is light and the complication small, and so the gear is worth while. A more complicated gear, like Professor Schmeidler's, may give, for a slightly greater weight and complication, even better results.

The point we really wished to make with these, perhaps somewhat rambling, speculations was that those who would have us believe that the aeroplane has reached its limit of development cannot have thought very much about the subject. The aeroplane as we know it to-day cannot be *much* improved, it is true, but perhaps quite as large an unexplored field lies still before us as that upon which the Wright Brothers and other pioneers entered thirty years ago. Their troubles were the many unknown factors of flying. Ours will be very largely the task of solving mechanical and engineering difficulties.



#### Royal Air Force Display

THE Air Ministry announces that several new features will be presented at the 13th Royal Air Force Display at Hendon on Saturday, June 25. For the present these are secret. The Display marks the culmination of squadron training for the year, and flying practices are now taking place for the varied programme, which will again demonstrate important progress in aeronautics during the year. Nearly 200 aircraft will take part, including some new and novel types. The attendance of 170,000 spectators in the aerodrome at last year's Display constituted a record for an outdoor event to which admission is charged. This year arrangements have been made to provide accommodation for a still larger number. Special steps have also

been taken to speed up traffic proceeding to Hendon, and right of way at important traffic points will be given to motor-cars bearing the official car labels, which can be obtained in advance. Tickets for the boxes and for the special enclosures and stands are now available from the Secretary, Royal Air Force Display, Hendon, or from the usual theatre agents and libraries. All boxes at £7 have already been sold, but separate boxes, seating six, at £4 and £5 are still obtainable. Tickets for the special enclosures cost 10s. and 5s., and reserved seats in the stands are 3s. and 2s. 6d. extra. The official car labels are priced 10s. and 5s.

The proceeds of the Display (after meeting expenses) are given to approved Service charities.



Sqd. Ldr. Malcolm Taylor, A.F.C., O.C. No. 40 (Bomber) Squadron, in his Fairey "Gordon" with Armstrong-Siddeley "Panther" engine. (FLIGHT Photo.)

## No. 40 (Bomber) Squadron THE FIRST "GORDON" SQUADRON

By Major F. A. de V. ROBERTSON, V.D.

UPPER HEYFORD aerodrome stands on a breezy plateau a few miles to the north of Oxford. Most aerodromes are breezy, but Upper Heyford strikes one as particularly so after following the steamy Thames valley and the Banbury Road, and then winding in and out among hills and valleys where one would think an aerodrome the last thing to be found. But when one reaches it, the site seems very suitable, and the country round about not so unfavourable as it seemed while one was approaching the place. It is a new aerodrome, constructed about 1925, and the buildings are very conveniently arranged. Group Capt. W. C. Hicks, A.F.C., commands the station. He is an old naval officer, and was in the airship service. In fact, he succeeded Wing Com. Colmore as Director of Airship Development after the R.101 disaster. He has at present a very mixed command. No. 99 (Bomber) Squadron has "Hinaidis," No. 18 B.S. is in process of being brought up to establishment with "Harts," the Station Flight keeps Avros and "Atlases" for the use of the Oxford University Air Squadron, and No. 40 B.S. has the Fairey day-bomber "Gordon." It is with the last squadron that we are concerned here.

The "Gordon" is a replacement for the Fairey III F. The initial "G" doubtless indicates the class General Purpose, a class which can be used either as a day-bomber or as an Army co-operation machine. In No. 40 B.S. the machine is a day-bomber. The fuselage is practically identical with that of the III F., though it is half a bay longer. The main difference lies in the engine, an Armstrong-Siddeley "Panther," in place of the "Lion." The mark used is 2A, a geared fan engine, which gives 535 h.p. at 2,000 r.p.m. at 3,000 ft. It is fitted with reduction gear and is moderately supercharged. The "Gordon" cruises at 110 to 120 m.p.h. and has a top speed of 145 at 3,000 ft. It can carry a load of two 230-lb. bombs, or four 112-lb. or 16 20-lb. bombs. It has one forward fixed gun on the left of the fuselage,

and the rear gun has the Fairey high-speed mounting, which is a very neat device, and allows the gun to be stowed away in a slot in the fuselage when the observer has other duties to perform; while it can be fixed to the mounting and brought into action in a very few seconds. The squadron are very pleased with the "Gordon," which they find to be a commodious machine and a steady platform for bombing.

The mixed composition of the station is not in accordance with the usual methodical arrangements of the Air Ministry, and it is understood that before long Upper Heyford will become a harmonious station of "Hart" squadrons (without necessarily disturbing the Station Flight), while the "Hinaidis" and "Gordons" will move elsewhere. No. 40 B.S. will probably go to the new aerodrome which is being prepared at Abingdon, only a few miles away and still in the Oxford area. At present the published programme of units to be re-equipped with "Gordons" amounts to five squadrons, namely, Nos. 40, 35 and 207 at Bircham Newton, No. 6 B.S. at Ismailia, and No. 14 at Amman.

The present C.O. is Sqd. Ldr. Malcolm Taylor, A.F.C., and he has under his command an obviously very "live" squadron. It does not take very much experience of regular fighting units to enable a spectator to see when a squadron or a regiment is well disciplined. One quickly spots accuracy in details of all sorts, from the correct alignment of machines in front of the hangars to the speed with which each order is carried out. When one notices in addition that every officer and man looks cheerful and jumps to do his job as though he enjoyed doing it, one can be sure that one is watching a first-class squadron. And such is No. 40 (Bomber) Squadron of the Royal Air Force.

The badge of the squadron is a red bomb of formidable aspect mounted on a background of Gordon tartan, and surrounded by a laurel wreath. Above is the squadron number, XL, in black, while the motto, "Fiat

### R.A.F. SQUADRONS

Special articles on other R.A.F. Squadrons have been published in "Flight," as follows:—

No. 601 (County of London) (Bomber), A.A.F., Lympne, August 15, 1930.

No. 43 (Fighter), Tangmere, September 19, 1930.

No. 2 (Army Co-operation), Manston, December 19, 1930.

No. 101 (Bomber), Andover, April 24, 1931.

Nos. 204 and 209 (Flying Boat), Mount Batten, June 12, 1931.

Cambridge University, Old Sarum, July 10, 1931.

Central Flying School, Wittering, July 17, 1931.

Oxford University, Eastchurch, August 7, 1931.

No. 600 (City of London) (Bomber), A.A.F., Tangmere, August 21, 1931.

No. 605 (County of Warwick) (Bomber), Castle Bromwich, April 1, 1932.



justitia ruat coelum" ("Let justice be done though the heavens fall"), seems very appropriate for a bomber squadron. What Geneva would think of it we can only surmise. One prized possession of the squadron is a trophy for inter-flight bombing at Catfoss. It takes the form of a silver model of a "Gordon," and the pedestal is inscribed, "Presented to the Officers of No. 40 (Bomber) Squadron, R.A.F., by C. R. Fairey, Esq., M.B.E., in memory of those officers who lost their lives whilst serving in the Great War." Mr. J. D. Siddeley is giving another trophy, for inter-flight gunnery, and Col. Robert Lorraine, the first C.O. of the squadron, has also promised to present a trophy.

Sqd. Ldr. Malcolm Taylor, who commanded No. 29 (Fighter) Squadron at Duxford and North Weald before he was appointed to re-form No. 40, on April 1, 1931, has succeeded a line of famous squadron commanders, and the squadron which he commands and which they commanded has a very fine war record. No complete history of the squadron has been compiled, but some facts about its achievements have been gleaned from various sources.

The squadron was formed in February, 1916, by Maj. Robert Lorraine at Gosport, and moved overseas in August of that year, "A" Flight on the 1st and "B" and "C" Flights on the 23rd. It was formed as a fighter squadron ("Scout" was the word used in those days), and was equipped with the F.E.8, a single-seater pusher with a 100-h.p. Monosoupape Gnome engine. The squadron kept this type until March, 1917, when it received the Nieuport Scout, and in October, 1917, it changed to the S.E.5A., which it kept until the end of the war.

No. 40 soon got busy on the front. On September 25, 1916, one F.E.8 escorted two machines of No. 25 Squadron which bombed some enemy aerodromes. Two days later a pilot of No. 40 saw a German balloon drifting loose over our lines, with the observer hanging below the basket. The pilot signed to the German to drop, but his parachute was entangled, and he could not do so. The F.E.8 kept near the balloon, but a machine of No. 29 Squadron flew up, and, not realising the situation, shot the balloon down



Instructing air gunners in the Lewis gun. (FLIGHT Photo.)

in flames. The German observer was fortunate, for he was not killed, but was taken prisoner.

In February, 1917, Maj. L. A. Tilney took over command of the squadron, and next month the Nieuport Scouts were received. In April a new flying officer joined the squadron, Lt. E. Mannock. Probably at first the squadron hardly realised what a great acquisition he was, but he soon showed his ability and was noted as a leader. In September of the same year he was promoted to Capt. and given command of a flight. While with No. 40 he destroyed six enemy aircraft, and when he was transferred to No. 74 he was in possession of the Military Cross and bar. Subsequently he gained the D.S.O. and two bars, and after his death was awarded the Victoria Cross. Those who knew Mannock believed that he was the greatest air fighter, and particularly the greatest air leader, in the war, despite the great achievements of Baron von Richthoven. Mannock would train every pilot in his flight in correct methods of air fighting, and would take the greatest pains to ensure that each of them "got a Hun." As a patrol leader he was a master of tactics, and would manoeuvre



Pilots of No. 40 B.S. (left to right) : Sgts. Emly, Harris, Pattenden, Sowden, Evans ; F/O. D. G. Morris ; Flt. Lts. J. E. L. Drabble, C. C. Edwards, R. J. H. Holland ; (behind) F/O. N. C. M. Styche ; Sqd. Ldr. M. L. Taylor, A.F.C. ; (behind) P/O. O. P. E. Williams ; F/O. H. V. L'Amy ; P/O. A. Taylor ; F/O's. H. P. Wilson, G. Calvert ; Sgt. Christian ; P/O. G. W. Montagu ; Sgt. O'Brien ; P/O. R. H. Page ; Sgt. Avent ; F/O. L. F. H. Orr ; P/O. W. H. N. Turner. (FLIGHT Photo.)





Handing up a camera to the observer. (FLIGHT Photo.)

enemy formations into the position he desired, and then smite them with the minimum of loss to his own side. No leader on either side was ever better beloved by the pilots who followed him and the mechanics who worked for him. One of his principles was that it was the duty of the flying corps to kill the enemy pilots—not merely to fight chivalrous duels and let an enemy escape because his bravery had aroused your own admiration. Every enemy pilot who escaped was capable of doing harm to the Allied cause another day.

Maj. Tilney was also a great organiser of success. Under him the squadron engaged in a number of carefully planned attacks on enemy balloons. To raw pilots it was a common delusion that a balloon was an easy victim. Actually an attack on a balloon was an exceedingly dangerous affair. There was usually a deadly barrage of machine guns and "Archies" waiting to catch the rash pilot who ventured near a balloon. Maj. Tilney schemed, and practised his schemes with meticulous care before he led his pilots to the attack. Then on May 2 he led his flights over the lines. One flight flew high to attract the attention of the observers in the balloons and the gunners. As they approached, the balloons were hauled down. Meantime another flight was approaching, hedge-hopping at a height of 50 ft., and the dark khaki of the top planes quite

escaped the notice of the Germans. As the balloons were being hauled down, these Nieuports climbed suddenly and opened fire at them from down below. The surprise was complete, and four balloons were destroyed, while a fifth only escaped through one of our guns jamming.

Three days later, on May 5, Lt. H. E. A. Ellis had a good fight. He attacked three Albatros fighters, who dived away from him. At 500 ft. one of them side-slipped and crashed. Another came down on its nose on Douai aerodrome and turned over, while the third made a safe landing. Then another German attacked Ellis, who had no machine-gun ammunition left. Nothing dismayed, he manoeuvred close to the enemy and fired seven rounds from a Colt automatic pistol. The German machine broke up in the air and was destroyed.

On August 9, 1917, another successful balloon attack was undertaken. The balloons were on the La Bassée-Arras front. This time the low-flying Nieuports kept even lower, some flying at 10 to 20 ft. As a result, the patrol had some unusual adventures on its journey. 2nd Lt. J. H. Tudhope hit some German telegraph wires with his undercarriage, but came to no

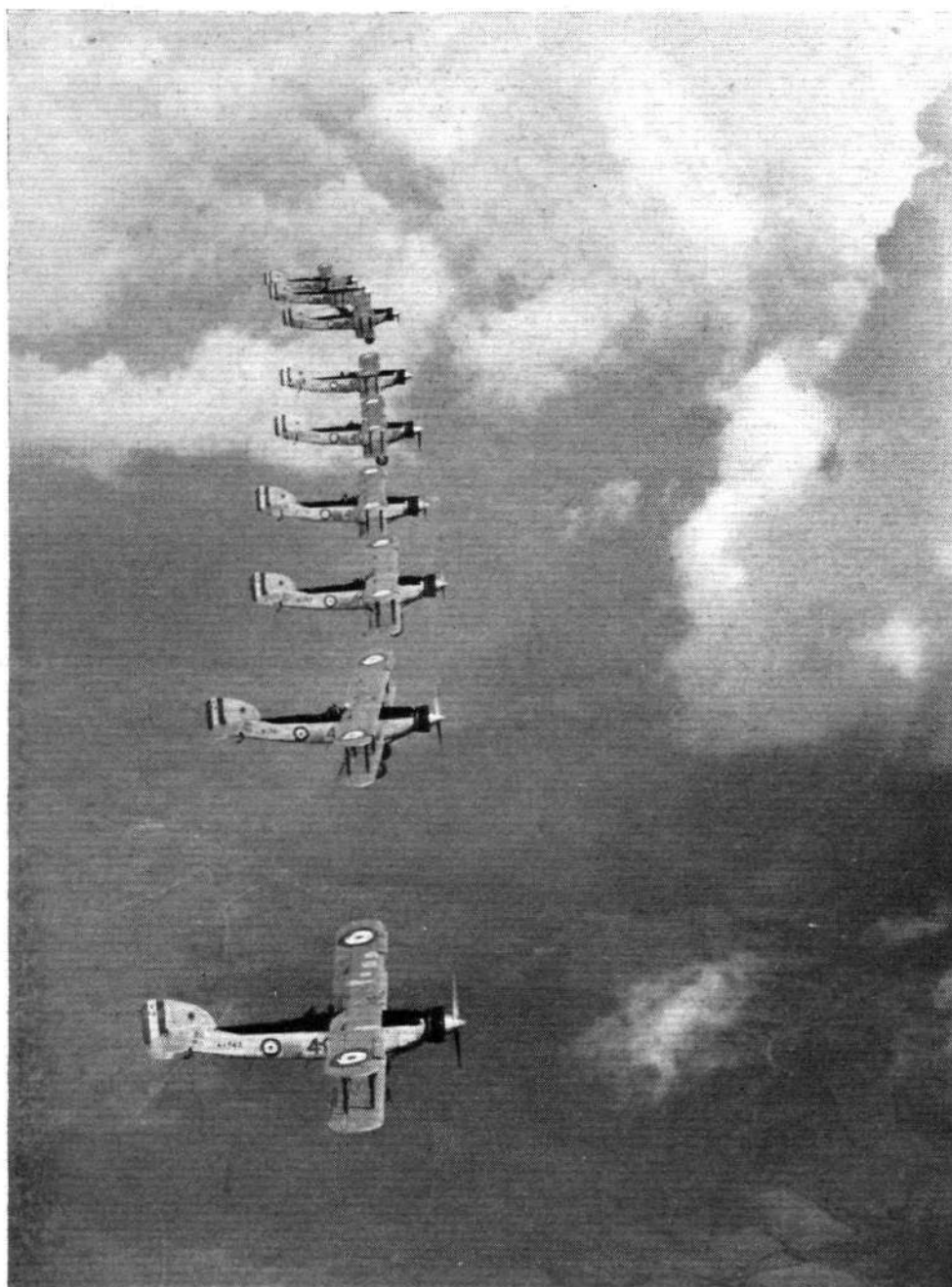
harm. Then he passed over some Germans sitting beside a pond, and fired at them, whereupon the Germans all dived into the water. 2nd Lt. W. MacLanachan flew over a troop of German cavalry, and his undercarriage hit the officer who was leading the troop. Whether that officer was brained or merely escaped with a headache is not on record, but a burst from the pilot's machine gun speedily scattered the astonished troop. 2nd Lt. G. T. Pettigrew was fired at by a machine gun, but he attacked it and flew on unharmed. He also came across some German cyclists, and saw at least one drop as he sprayed them. The squadron claimed five balloons destroyed on that day.

On August 15, 1917, another brilliant pilot joined No. 40 Squadron, namely, Lt. G. E. H. McElroy, a Canadian who won the M.C. and two bars, and also the D.F.C. and bar. In his brief career he destroyed 46 enemy aeroplanes and three balloons. He was soon promoted to flight commander, but then was posted to No. 24 Squadron. He returned to No. 40 in June, 1918, and his presence and his influence had an immediate effect on the whole squadron. On July 31, 1918, he was reported missing.

On March 15, 1918, Maj. R. S. Dallas, D.S.O., D.S.C., and two bars, took over command of No. 40. He was a magnificent pilot and a most daring and scientific air fighter. He is believed to have accounted for 50 enemy



The Airmen of No. 40 (Bomber) Squadron. (FLIGHT Photo.)



Line Abreast : Among the clouds on a stormy day. (FLIGHT Photo.)

aircraft. This was the time of the last great German advance against the 5th Army, and on April 14 Maj. Dallas with three captains (an unusual formation for a very special piece of work) reconnoitred the junction of the 1st and 2nd Armies, where the situation was obscure. Early in the mission Maj. Dallas was wounded by machine-gun fire from the ground (the weather was bad and the S.E.5A.'s were flying low), but he carried on until he was wounded a second time, when he successfully regained his aerodrome. He seems to have made very light of his wounds, for on May 2 he dropped a "booby trap" on a German aerodrome in the form of a parcel marked: "If you won't come up here and fight, herewith one pair of boots for work on the ground. Pilots—for the use of." He then hid in the mist until Germans collected round the parcel, when he attacked them with bombs and machine gun. Maj. Dallas was an Australian, and had been in the R.N.A.S. His end was heroic, but tragic. He was known to have been overtaxing his energies, and superior authorities felt that such a valuable officer must be taken off squadron work. He was accordingly recommended for promotion to Wing Com. The letter approving his promotion had been despatched on June 1, 1918, but before it arrived Maj. Dallas had gone over the lines and been shot dead in a fight with three triplanes near Lievin.

Among the other successful pilots of No. 40 Squadron were Lt. R. G. Landis, who destroyed eight enemy aircraft, and 2nd Lt. J. H. Tudhope, who accounted for five.

Apart from the names mentioned above, the records of this squadron show a high average level of work rather than a reliance on the feats of particular "aces." Mannock destroyed six enemy machines while with No. 40, and ran up his great bag when with No. 74. In the course of its time in France No. 40 destroyed 130 aeroplanes, sent down 144 out of control, destroyed 30 balloons, and drove 10 other balloons down in a damaged condition.

Another successful balloon day went to the credit of Lt. L. Bennett. On August 19, 1918, he attacked two balloons in succession which were flying east of Merville and set them both on fire. Later in the day he attacked a third balloon, which also went down in flames, and then went on to a fourth. This was hauled down, but Bennett was not to be denied, and he succeeded in setting it on fire on the ground. In this last case the element of surprise was not obtained, and in making his final attack the pilot must have run the gravest risks. Bennett only crossed the lines on 25 occasions, but in that comparatively short time he destroyed eight balloons, crashed one enemy aeroplane, and drove another down out of control.

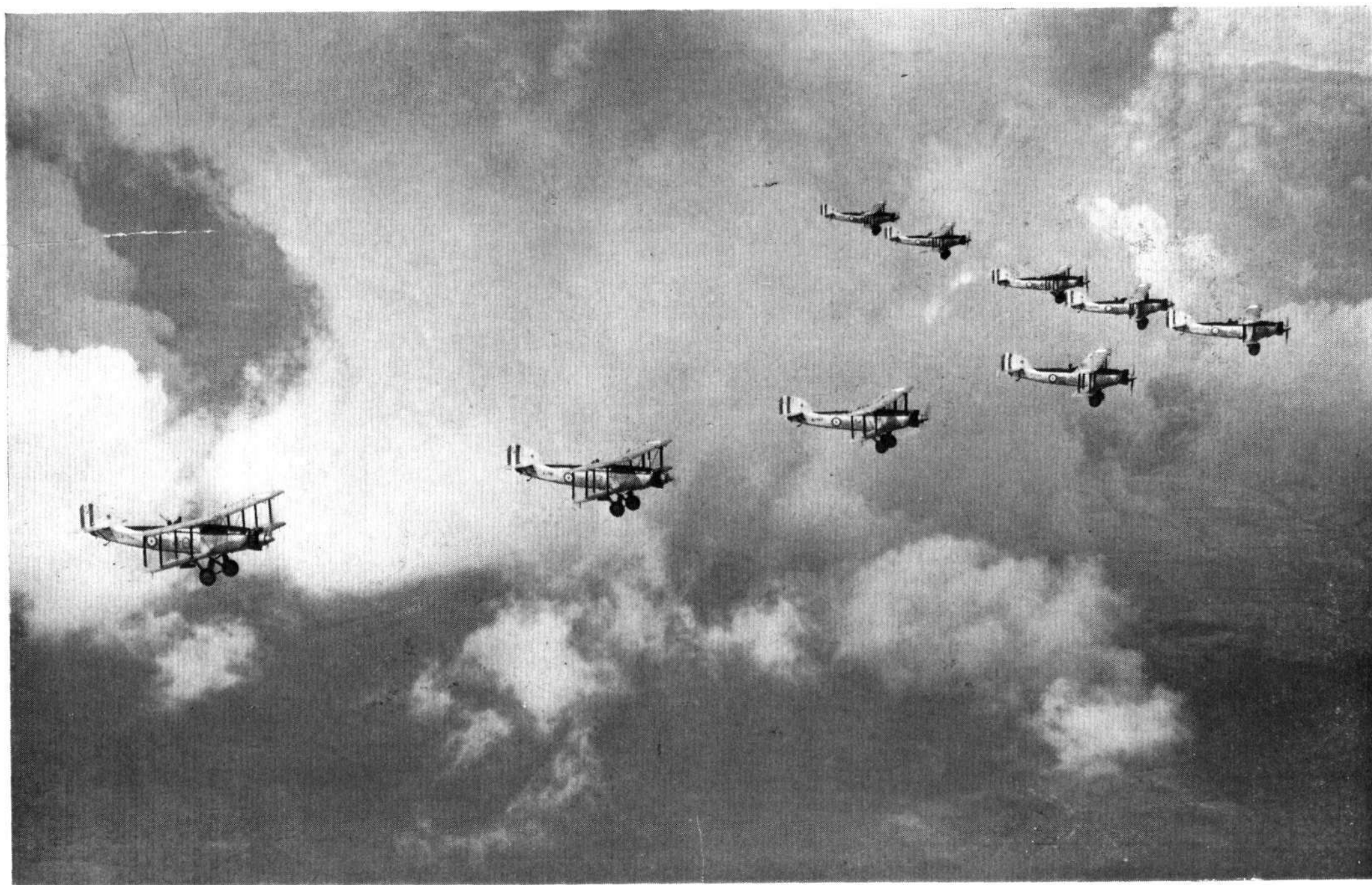
Some light is thrown on the personal side of the life of No. 40 Squadron by a letter from a pilot who was with the squadron for a short time, from April to September, 1917. He wrote that his time with No. 40 Squadron was very enjoyable. The *esprit de corps* of the squadron was excellent, the quarters were comfortable (the squadron was then at Bruay), and he was disappointed when he was posted to the Home establishment.

As was remarked above, in October, 1917, the squadron was re-equipped with the S.E.5A. This machine and the "Camel" were the two types of "scout" which finally got the upper hand of the German fighters. The

"Camel" was the quicker on manoeuvre, but not so fast as some of the German machines. The S.E.5A was less manoeuvrable but was faster and could be dived with the throttle full open. Fokker triplanes were apt to break up if they were dived too hard. Consequently the S.E. had always the option of breaking off a flight when its pilot judged it best to do so, while the "Camel" pilot usually was obliged to fight it out, whatever the odds. Mannock did practically all his great fighting on the S.E.5A, and so did McCudden. Mannock once said (we quote from an article by Flt. Lt. J. I. T. Jones published in the *Cranwell Journal*): "Don't ever attempt to dogfight a triplane on anything like equal terms as regards height; otherwise he will get on your tail and stay there until he shoots you down. Take my advice, if you ever get into such an unfortunate position, put your aircraft into a vertical bank, hold the stick tight into your stomach, keep your engine full on, and pray hard. When the Hun has got tired of trying to shoot you down from one position he will try another. Here is your chance, and you'll have to snap it up with alacrity. As soon as your opponent commences to manoeuvre for the next position, you must put on full bottom rudder, do one and a-half turns of a spin, and then run for home like hell, kicking your rudder hard from side to side in order to make the shooting more difficult for the enemy, but—still praying hard." Once the S.E. had got into its dive, the triplanes had little chance of catching it.

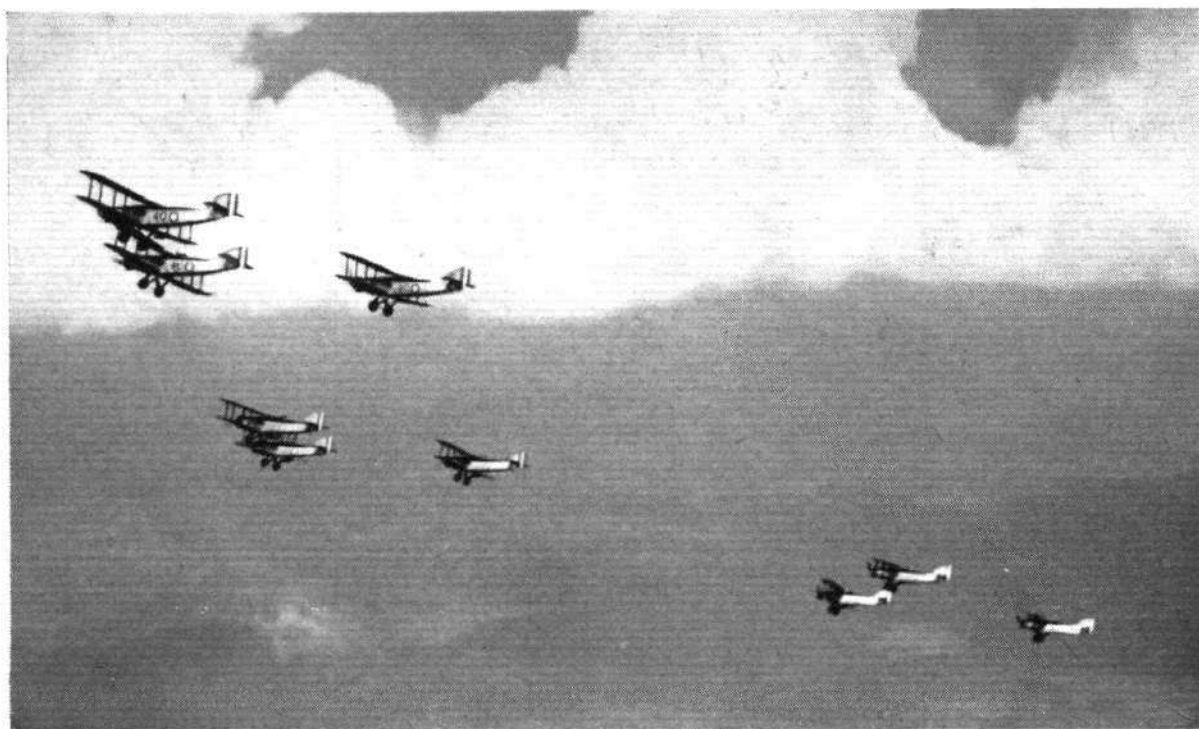
Maj. R. J. O. Compston took command of the squadron





Squadron "V": A fine piece of formation flying by No. 40 (Bomber) Squadron. (FLIGHT Photo.)





"Squadron, Right wheel": No. 40 (Bomber) Squadron in squadron formation. (FLIGHT Photo.)

on August 20, 1918, and remained in command until it was disbanded. The squadron returned to England on February 13, 1919, and was disbanded at Tangmere. It was re-formed at Upper Heyford on April 1, 1931.

The total casualties of the squadron were: Killed and died of wounds, 3; wounded, 14; missing, presumed dead, 23; prisoners of war, 18; killed in accidents, 3; injured in accidents, 13.



Line up of the 12 "Gordons" of No. 40 (Bomber) Squadron at Upper Heyford. (FLIGHT Photo.)

#### Aerial Photography

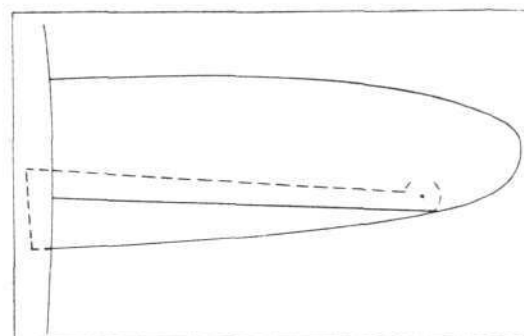
THE exhibition of aerial photographs held by Aero-films, Ltd., at the Camera Club, 17, John Street, Adelphi, London, W.C.2, was formally opened on May 3 by Lt. Col. F. C. Shelmerdine, C.I.E., O.B.E. Mr. Nigel Norman, in introducing the Director of Civil Aviation, said that a few years ago the task of this post was a good deal easier than now. Col. Shelmerdine was an extremely busy man, and he thought they would agree that it was very good of him to spare the time to open this exhibition. Col. Shelmerdine disclaimed any specialised knowledge of photography, but said that as Director of Civil Aviation he was keenly interested in aerial photography. This was born and cradled during the stress of war, but since then had found many peaceful applications, and great strides had been made in technique and equipment. He thought all the

50 photographs exhibited were taken with the Williamson "Eagle" camera, and referred to the pistol camera of the same firm. What particularly appealed to him as Director of Civil Aviation was that aerial photography and survey had been able to carry on without any Government subsidy. Aero-films, Ltd., had now been going for 12 years, and had been able to make their way. For that he thought they were to be congratulated. Mr. Olaf Bloch, President of the Royal Photographic Society and Technical Director of Ilford, Ltd., spoke of the future of photography, and said that development would be towards faster emulsions with less grain. Silver as a base had had a good innings, and it was time to look around for another base. He held out hope for improved mist-penetration by new emulsions and filters. The exhibition will remain open, daily, until May 31.

# Increasing the Speed Range

German Plane with Variable Wing Area and Profile

By EDWIN P. A. HEINZE



THE SCHMEIDLER VARIABLE WING : Diagrammatic Plan View of the arrangement of the wing. The trailing edge is pivoted at the outer end and housed in the main wing.

PROF. DR. SCHMEIDLER, of the College of Engineering at Breslau, in Germany, has developed a wing, the area and profile of which are variable in flight to the extent of one-fifth of the full wing area. The manner in which the problem has been solved is very interesting. It is materially different to what has been done in this direction hitherto.

The invention was demonstrated on a monoplane, the wing of which contained a trailing edge portion having the shape roughly of a right-angled triangle, the acute angle of which is pivoted inside the wing at the tip end, while the side opposite is held in a guide on the cabin wall, or rather inside the central section of the wing, which covers the cabin. On its lower side this trailing edge of the wing is provided with a toothed rack, which engages

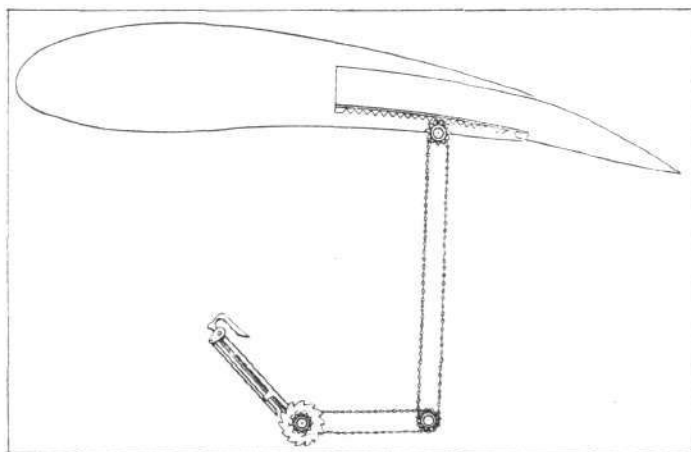


THE SCHMEIDLER VARIABLE WING : Three-quarter rear view of the experimental machine.

with a pinion on a shaft passing through the central main-wing section to the other wing, where it likewise carries a pinion similarly engaging with a rack on the other wing section. The pinion shaft also carries a chain sprocket, and a chain transmission leads to a sprocket by the side of the pilot's seat, where a handle with a pawl arrangement is provided. The handle is worked in pump-handle fashion, and by its means the trailing edge portions are pushed out or pulled in. The retractable sections are so shaped as to form a continuation of the main wing profile so the latter assumes a different camber when the sections are pulled in.

The invention was demonstrated in flight, as also when starting and landing. With the wing sections drawn in, the starting distance was very materially increased (to the extent, it is asserted by the inventor, or 40 to 50 per cent.). In flight the drawing in of the wing sections effected a very pronounced increase of speed.

Diagrammatic representation of the operating mechanism of the Schmeidler variable wing. The camber as well as the area is altered.



## The Makhonine Way

THE very brief account which Mr. Heinze gives of the wing designed by Prof. Schmeidler, of the Breslau College of Engineering, is not sufficiently technical to enable one to form any reliable estimate of the net gain in speed range. Devices of this kind must of necessity form a compromise between the aerodynamic advantages to be gained and the extra weight of the wing structure and its operational mechanism. The statement that, according to the inventor, the difference in take-off run with wing closed and wing open is very marked does not really prove anything. It was to be expected that a wing of increased area and camber would give a greater lift

than the same wing "closed up." The real test is whether a wing of fixed area and camber could have given the same performance.



THE MAKHONINE VARIABLE AREA MONOPLANE : This view shows the wing area reduced almost to its minimum, as it would be in the high-speed condition.

On the face of it one would say that Prof. Schmeidler has attacked the problem "from the wrong end." It was, we believe, Mr. C. C. Walker, of the de Havilland Company, who once said: "Increased chord is no cure for an overloaded machine, but increased span is." In this case it is not, of course, a question of an overloaded machine, but the same principles apply. It will be granted that by combining variable camber with variable chord, Prof. Schmeidler has found a scheme which would be expected to be more effective than a mere increase in chord. Whether or not the extra weight involved leaves a balance in favour of the wing is impossible to guess without much fuller data than Mr. Heinze supplies.

To us it seems that if one is to derive any worth-while benefit from a variable wing, the better way to tackle the problem is via the variable span. After all, in the light of modern aerodynamic theory we know that span loading plays a very important part in the efficiency of a wing, especially at low speeds, where the span loading determines the induced drag.

Last year a machine was built in France for the purpose of testing out such a wing arrangement. The design owed its inception to M. Makhonine, who is, we believe, a Russian domiciled in France, and who succeeded in convincing the French authorities that his idea was worth a trial.

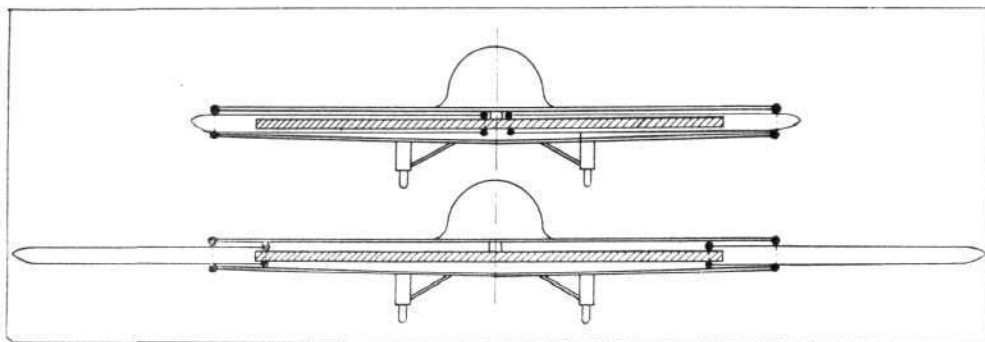
The Makhonine machine is shown in the following photographs, and the general "scheme" is indicated in a very diagrammatic sketch which we reproduce by courtesy of our excellent French contemporary *Les Ailes*.

The sketch is purely diagrammatic, and probably bears little enough resemblance to the actual wing, but it does indicate the general principle of the Makhonine wing, which is an inner wing root into which the outer wing portions telescope. But there is more to the Makhonine system than that. The diagram shows that inside the wing is a fixed beam or spar anchored at its centre to the fuselage. When the wing tip portions are in their "out" position, this beam assists the hollow wing roots in carrying the load, although from the fact that it is on the centre line, and therefore has no great depth on each side of the neutral axis, the beam cannot be very efficient. Its main function would seem to be rather that of relieving stresses by changing the spar from a lever of one order into a lever of another order.

In actual construction it seems likely that instead of the four rollers shown in the diagram there are many rollers, and one imagines that the wing has probably been built as a multi-spar construction, as this would appear to lend itself better to the Makhonine scheme than a two-spar structure.

Few data relating to the Makhonine machine are available, but at least the machine has flown, although we have no information relating to the useful load carried. The first test flights were made in August of last year, but since then nothing has been heard of the machine. Of the reason for this we are ignorant at the moment.

The few data available indicate that the variation in wing span and wing area is such that a marked effect on performance would be expected. For example, with the wing tip portions in the "out" position the span is 21 metres (68 ft. 10 in.) and the wing area is 33 sq. m.



THE MAKHONINE WING : This sketch is purely diagrammatic, in order to show the principle, and does not correspond closely with the actual wing.

(355 sq. ft.). When the wing tips are withdrawn into the wing, the span is reduced to 13 metres (42 ft. 7 in.) and the wing area to 19 sq. m. (205 sq. ft.). During the test flights last year the gross weight was only 2 800 kg. (6,160 lb.). With this load the machine is reported to have got off very well with the wings spread, and to have landed successfully with the wings drawn in. The real test, however, will be the full-load one, when the designed gross weight is 5 000 kg. (11,000 lb.). In that condition the wing loadings will be 31 lb./sq. ft. and 53.7 lb./sq. ft. respectively. As the machine is fitted with a Lorraine engine of 450 h.p., the power loading at full designed gross weight would be 24.5 lb./h.p. The designer estimates that with these loadings the machine would just get off, and would fly at the reduced wing area, although if a landing had to be made shortly after the take-off it would, of course, be necessary for the pilot to spread the wings and also to jettison his fuel.

It is reported that during the test flights at 6,160 lb. gross weight the pilot landed the machine with wings retracted, i.e., at a wing loading of 30 lb./sq. ft., which was near enough the same wing loading as the fully-loaded machine would carry on the full area at the maximum designed gross weight.

The difference between the gross weight at which the machine was flown last year and the designed gross weight is 4,840 lb. If it is assumed that the useful load then carried was fairly small (as it probably was for preliminary tests) and we disregard it in our consideration of the machine, this figure represents the disposable load available. If the whole of it were in the form of fuel, it would represent some 650 gallons, which should give a machine with as high a cruising speed as the Makhonine machine should have with reduced area a very substantial range. Or if only a portion of the load were used for fuel, and the range reduced, the pay load should attain a very high figure.

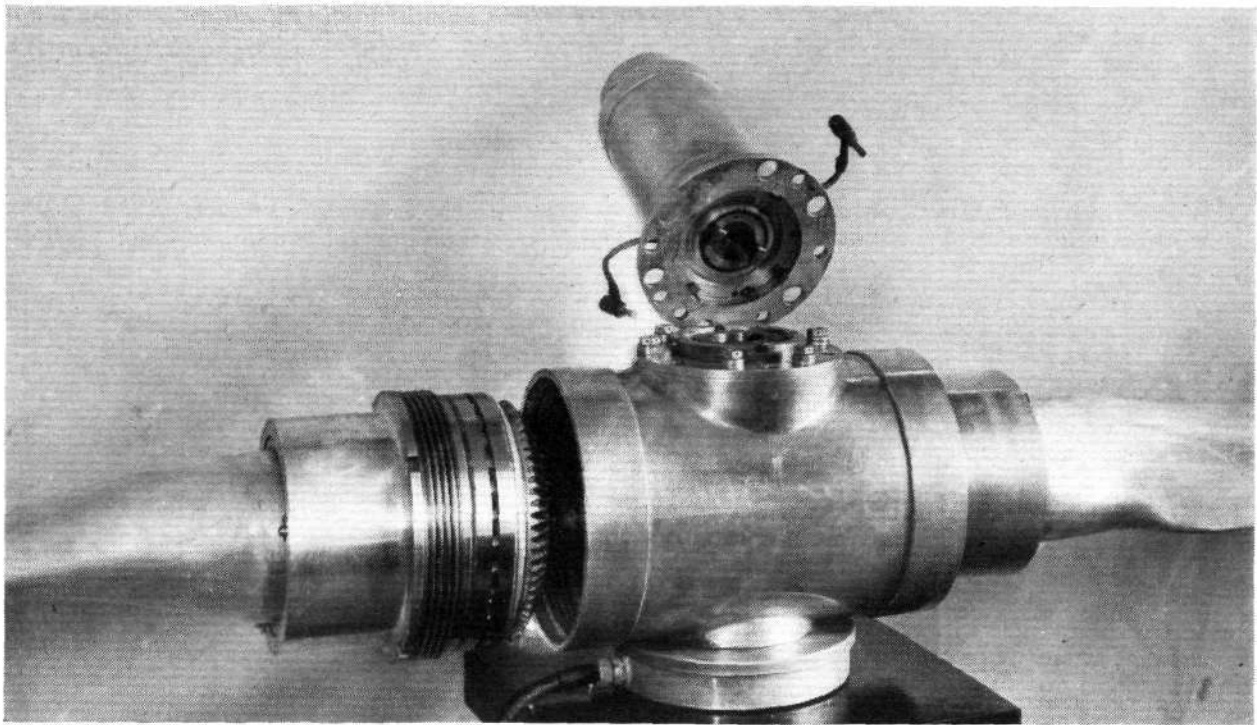
One may think of many reasons why nothing more has been heard of the Makhonine machine. Funds may have run low, or trouble may have been met with in the controllability (the ailerons are, of course, placed near the outer ends of the fixed wing portions), or again the wing may not have been found strong enough to carry the full designed load, or, if strong enough, may have been found to deflect to such an extent under load that the operation became difficult or impossible. Or a host of other possibilities present themselves in connection with such a radical change in design. Until definite information is released it is impossible to say. But at any rate one admires M. Makhonine for a very daring and ingenious piece of work, and hopes that he will be able to continue his interesting experiment.



THE MAKHONINE MONOPLANE : View of the machine with wings extended, as for take-off and landing.



# The Turnbull V.P. Propeller



**THE TURNBULL PROPELLER PARTLY ASSEMBLED :** On top of the hub is seen the electric motor in its casing. The blade on the left is screwed into the hub until the spur wheel engages with the gears inside. Centrifugal force loads and thrust loads are taken by ball and roller bearings.

**M**ODERN tendency in aero engine design is unmistakably towards supercharging. Full use cannot be made of the advantages which supercharging gives unless some means are found for absorbing the engine power efficiently. One may readily visualise two fairly obvious ways of achieving this: by a variable pitch airscrew or by a two-speed gear box. So far the latter does not appear to have received much attention. The variable pitch airscrew, on the other hand, has gone through a very considerable amount of experimentation, and fairly successful types have been produced both in this country and in America, France and Germany.

The variable pitch airscrew may be assumed to afford the better solution, theoretically at least, in that its blades can be adjusted to the best efficiency through a very wide range of forward speeds. The two-speed gear box might be a somewhat easier problem mechanically, but would share with the V.P. airscrew the drawback of extra weight. Even if it be assumed that the extra weight entailed is the same in both cases, the V.P. airscrew would seem to score somewhat in the matter of noise.

The variable pitch airscrew is not, of course, a new idea, but in the earlier days of flying the use of wooden blades increased the difficulties of the problem very materially, as it was found almost impossible to effect a sound joint between the roots of the wooden blades and the metal hub. With modern methods of metal propeller construction, however, the problem assumed a slightly different aspect, and lately there has been considerable progress.

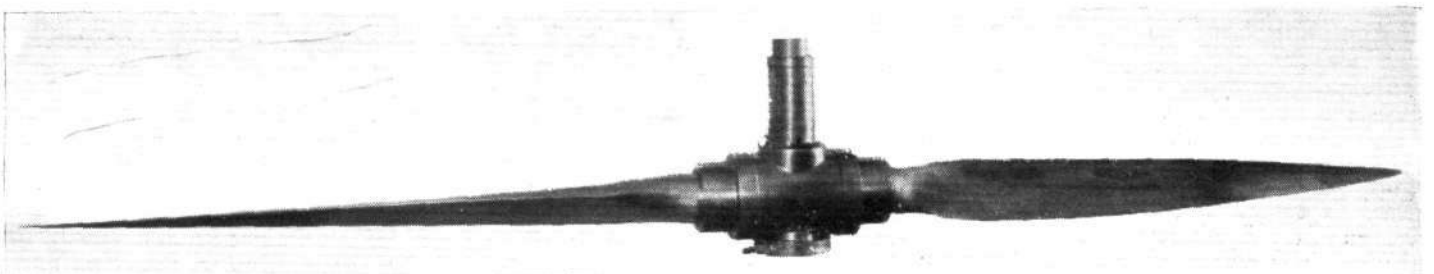
In America a number of V.P. airscrews have been

produced, but one of the most successful and promising is that designed by Mr. W. R. Turnbull. This propeller makes use of a small electric motor for changing the pitch of the blades, the motor being geared down at a very high ratio. Mr. Turnbull has disposed of his American rights to the Curtiss Aeroplane & Motor Company, and this firm has built a number of propellers which have been flight-tested extensively. The propellers range from 200 to 800 h.p.

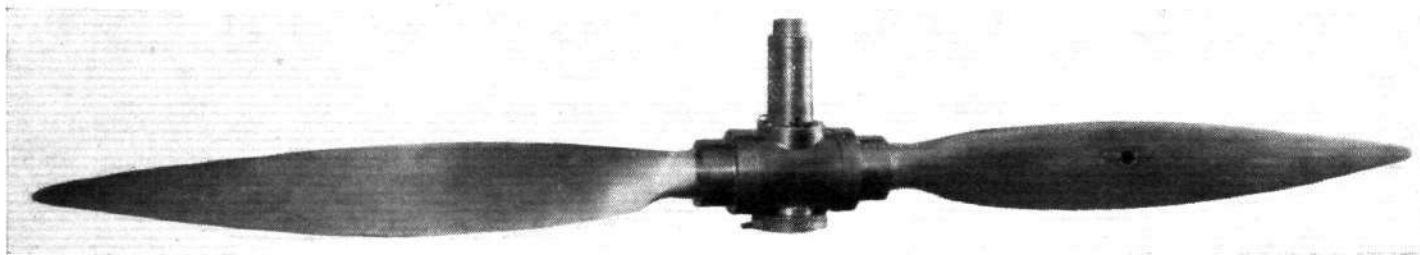
Mr. Turnbull, who is at present visiting England for the purpose of arranging with some British firm to take up his European rights and manufacture the propeller, is a Canadian who came to England during the war and was for a considerable period on the technical staff of Frederick Sage's aviation department under Mr. Gordon England. Here he specialised in airscrew design, so that his experience in this particular branch of aviation engineering is both long and varied.

The Turnbull variable pitch airscrew consists of aluminium alloy blades carried in a steel hub, as shown in one of the photographs. The blade roots have a shoulder against which bears the ball bearing which takes the loads imposed by the centrifugal force on the blades. The bending loads caused by the airscrew thrust would be likely to cause the propeller roots to bind in their sleeves, and to prevent this a roller bearing is employed. Thus the blade is carried in anti-friction bearings in both its highly-stressed planes, and the effort required to vary the pitch angle is reduced to a minimum.

At the inner end of each blade root is a spur wheel



**AT NORMAL PITCH :** The blades of the Turnbull V.P. propeller can be rotated through 90 degrees.



"FEATHERING": The blades of the Turnbull propeller set edge-on to the direction of flight. In the case of an engine on a multi-engined aeroplane stopping, the blades would be turned to this angle to give minimum drag.

which forms part of the gearing, by means of which the drive is transmitted from the spindle of the electric motor to the airscrew blades. This gear ratio is, as already mentioned, very high, so that an electric motor of quite low power suffices to operate the pitch. Actually the motor is of  $\frac{1}{4}$  h.p. and 12 volts, so that it can be driven from the accumulator already carried on most commercial and military aircraft. The gearing and motor speed are such that the pitch angle is changed at the rate of 1 degree in 3.4 sec.

The Turnbull V.P. propeller is naturally somewhat heavier than a fixed pitch airscrew, but the increase in weight is by no means prohibitive. Many of the parts

can be standardised for quite a wide range of powers, such as for instance the electric motor and its gear transmission, the main central sleeve, and many of the other smaller parts, provided blades with the same type of root are used. The electric motor is placed on the front part of the hub, where it offers very little air resistance, but if desired it could readily be enclosed in a small spinner.

Mr. Turnbull is in England for a limited time only, and any firm or individual desiring to communicate with him with a view to making arrangements about the European rights should address their correspondence to Mr. Turnbull, c/o the Bank of Montreal, 9, Waterloo Place, London, S.W.1.



## SKYWRITING

A SELECT Committee of the House of Commons, under the chairmanship of Sir Arthur Steel-Maitland, has been set up to consider the use of appliances for projecting writing or other displays on the sky, or for broadcasting speech or other sounds from aircraft, and to report on the desirability of legislation in this connection. The Committee held its first meeting on April 22, and has been sitting every Tuesday and Thursday since that date. At the meeting held on May 5 evidence was given from the legal standpoint, and we think the following, which we quote through the courtesy of *The Times*, throws a very interesting and valuable beam on the clouds that have been obscuring the problem of "air ownership."

Mr. Walter Monckton, K.C., in his summary of evidence, said that the *prima facie* rule of law was that the column of air above a plot of land was the property of the landowner. The common law had always abhorred the idea of ownerless tracts. In accordance with the principle of finding an owner for every tract of space, the common lawyers naturally assigned the superincumbent air as well as the subjacent minerals to the surface freeholders. The maxim adopted was *Cujus est solum ejus est usque ad coelum et ad inferos*. He did not think that a Court would now feel itself at liberty to disregard this maxim. The maxim, however, was evolved at a time when the ownership of the air was a matter of merely academic interest. The Courts would probably tend nowadays to construe the rule as narrowly as possible. Accordingly, he was of opinion that they would reject the contention that a landowner had property in a passing cloud. This result could be reached by analogy from the rule that a landowner had no property in animals *feræ naturæ* that were on his land unless he had reduced them into possession.

It had further been suggested (Halsbury's Laws of England, Vol. 24, p. 156) that the strict right of property did not extend skyward without limitation so as to entitle the owner to sue in trespass; the contention was that the extent of the right was limited by the power of control and could not extend beyond possible possession; and that probably the ownership was limited to the air space required for the erection of buildings. It seemed difficult, however, to find legal basis for this view. Pollock on Torts, twelfth edition, p. 352, suggested that the most reasonable rule would be the limit of possible effective possession. But he appeared to recognise the difficulty of finding a legal basis for this proposed limitation. In short, it was unlikely that this right of property would be limited to the height of buildings; even if it were limited to the area which could be brought into effective possession, it must extend to all the air which would be used by a sky-writer, whether by means

of a projector or an aeroplane, for in either case the sky-writer would be bringing so much of the air into effective possession and the occupier, deriving his title from the freeholder, could do the same.

### TRESPASS AND NUISANCE.

Taking sky-writing by projectors, two remedies suggested themselves—trespass and nuisance. A difficult question arose whether the sky-writer effected an "entry" upon the space selected. Assuming that there was such an entry, he thought that the occupier would be held in England to have an action of trespass. But whether it were possible or not to make an "entry" solely on the property which another had in the air, he doubted if that "entry" could be made by a beam of light. For although a beam of light was at any rate so "material" as to be affected by gravitation, it would not be thought, he regarded by the Courts as sufficiently corporeal to justify a finding that there was physical interference with the plaintiff's property. It was difficult to distinguish the case of the projection of a beam of light from the case where a piano-player in an adjoining house emitted waves of sound which found their way into the plaintiff's premises; and in that case he did not doubt that the Courts would regard the remedy as lying in nuisance rather than trespass.

With regard to nuisance, he thought that a person who turned his headlights on to his drawing-room windows so as substantially to interfere with his ordinary comfort could be proceeded against in an action for nuisance, but in the case of the projector it would be difficult, unless sky-writing was developed in intensity, to prove that the light thrown on the sky above his premises was a substantial interference with the ordinary amenities he enjoyed, and damage in this sense was an essential ingredient in an action of nuisance. For these reasons he thought that the law did recognise a right of property in the air above the freeholder's land sufficiently extensive to cover the operations of this, and indeed any, type of sky-writer, but that the occupier would not be likely to succeed in an action of trespass or, so far as sky-writing was known to him to have developed at present, in an action of nuisance.

With regard to sky-writing by an aeroplane, an aeroplane crossing the boundaries which limited the air occupied by him above his holding would in his view, commit a trespass but for section 9 (1) of the Air Navigation Act, 1920, and it was to be noted that that sub-section protected only in respect of trespass or in respect of nuisance "by reason only of the flight of aircraft" over property. This would not, in his view, protect against an action of trespass if the sky-writing aeroplane instead of flying over the property, hovered for a substantial time while writing. There might, of course, be difficulties in this case also in proving that the aeroplane was, in fact, over the plaintiff's premises. He thought that an action of nuisance would lie if the noise emitted by the aeroplane—whether or not it had a loud-speaker—was sufficient to interfere with the ordinary amenities of the occupier. It was a public nuisance to do an act not specifically authorised by the law if the effect of the act was to endanger the comfort of the public. The question of fact would be the same as those involved in a private action of nuisance. The remedy was to indict the aviator as for a criminal offence.



### "Punch" Summer Number

If the coming summer is one-quarter as bright and full of punch as the *Punch* Summer Number, just published, we shall have little or no cause to grumble. In one respect only would we have it differ—and that is in the matter of dryness! Excluding advertisements (and these are always lookatable in *Punch*), there are some 48 pages, made up mainly of illustrations—many in full colours—by well-known *Punch* artists, who this year are, we think, at their best, both as regards the handling of pen or brush, and humour. So good are they, in fact, we find it impossible to pick out any for individual mention. We have always thought that the modest shilling demanded

for these special numbers of *Punch*—Summer or Winter—has been well spent, but this time especially so.

### Miss Amy Johnson and Mr. J. A. Mollison Engaged

THE engagement was announced on May 10 of Miss Amy Johnson, who accomplished a record solo flight to Australia in 1930, to Mr. J. A. Mollison, who recently made a record flight to the Cape. The marriage, it was announced, would take place almost immediately. It will be remembered that Mr. Mollison was planning shortly to fly, with Capt. V. P. Saul, from Ireland to New York across the Atlantic. It is not known if these plans will now be modified, but it has been rumoured that Miss Johnson may join him in this or a similar attempt.



# Increasing Safety in the Air

**A**S recorded in our issue of April 29, 1932, the National Safety First Association (Inc.) recently formed an Air Safety Section, and this was officially inaugurated at Croydon on May 5, when His Royal Highness the Duke of York, K.G., who is Patron of the Association, presided at a luncheon which preceded the special session at which the inauguration of the Air Safety Section took place.

After lunch at the aerodrome hotel, His Royal Highness made a tour of inspection of the aerodrome buildings, and boarded the Handley Page 42 "Horatius," which he examined with great interest. It had been intended that the machine should make a flight, but the weather just then was very bad indeed, with heavy rain and no visibility, and the flight was very wisely cancelled.

In formally opening the conference, the Duke of York said that as Patron he was very glad to be present at the setting up of the Air Safety Committee, which marked a new development in the work of the Association. The great assistance given by other bodies was acknowledged, and was much appreciated. It might seem, His Royal Highness said, early days to start an Air Safety Committee, but who, he asked, could have foretold the extent to which motor transport had developed during the last 30 years. So no one could foretell how aviation would develop during the next 30 years, and if a road safety movement had been started 30 years ago, the statistics recently issued by the Home Office might not have been such sad reading.

Aviation, the Duke of York said, provided a magnificent field for the pioneer among the youth of the country, and he could think of nothing better calculated to develop self-reliance, good judgment and other qualities which all wished to see fostered among the rising generation. They all wanted to see aviation develop on sound lines and without needless waste of life. No effort should be spared to keep that waste as low as possible. In the early days of flying, the weakest link was the machine. So great had been the technical development that now the weakest link was the human factor. The National Safety First Association had done, and was doing, good work in encouraging the sound and safe use of the roads. Its aim was not so much to stress danger unduly as to encourage the facing of danger in the best way. He thought there was great scope for similar teaching in regard to aviation, and wished the new Air Safety Committee success.

Capt. F. E. Guest was in the chair, in the absence of Sir Philip Sassoon, who was detained at Geneva. Before calling upon Capt. Ivor McClure, D.S.O., to read the first paper of the congress, Capt. Guest referred to the warm response which any national cause could always count upon from the Royal Family.

Capt. McClure's paper was entitled "Air Sense," and was an extremely interesting and amusing one. He began by saying that they might well exclaim, "What! Another Committee in aviation?" But he would point out that when a passenger was about to fly, he did not ask if the pilot was keen. He asked how much experience the pilot had. The best intentions were of little use without experience. Man was perpetually at war with machinery, which he tried to bend to his will. Often enough he merely succeeded in bending the machine! For every victory man gained, the machine counter-attacked a thousand times. To keep it disciplined and safe demanded unceasing vigilance. Vigilance was just what the National

Safety First Association had been doing its best to encourage, and in doing so had gained experience. The slogan of the Association had been, "Education and Co-operation rather than Legislation and Compulsion."

To assist the Safety First Association in its air safety campaign a committee had been formed, on which were representatives of the Air Ministry, the Automobile Association, the Air League, the British Aviation Insurance Co., Ltd., and the Guild of Air Pilots and Navigators. Work had begun by trying to establish between pilots and ground folk greater consideration for each other's needs. A pamphlet entitled "Air Sense" was now being prepared, and would be issued to each new holder of an "A" licence. The contents were based on accidents which had happened, dangers which had been incurred, and ill-feeling which had been aroused at home and abroad.

At present it was only at a very popular meeting that more than 100 aeroplanes were gathered together. Everybody recognised that it was an exceptional occasion which

demanding exceptional care, and everybody took great care. When the time came for 200 aeroplanes to be housed at each aerodrome around London, the occasion would cease to be regarded as special, and the danger of the human element would be introduced.

Maj. R. H. S. Mealing, Chief Technical Assistant at the Directorate of Civil Aviation, then read a paper entitled "The Services Necessary for the Safety of Regular Air Transport." The paper dealt with the wireless, meteorological and the lighting services. As these will already be familiar to readers of FLIGHT, and we have but little space to spare, we will confine ourselves to placing on record the nature of Maj. Mealing's paper.

Capt. P. D. Acland (who is chairman of the Aviation Section of the Chamber of Commerce) said he was asked to open the discussion in place of Col. Shelmerdine, Director of Civil Aviation, who was away at Geneva and could not get back for the conference. Maj. Mealing's paper had told them a little of the working of

air transport services under Government and international control. He would point out that in aviation there was more official control than in any other branch of life. In aviation there were no less than 14 bodies and standing committees which dealt with regulations and control, and contact had to be kept with a further 20 bodies abroad! Air transport was getting safer and safer. What was now wanted was that the public should be given the best possible information about flying and should be told that it was with us and that it was safe. The public should be encouraged to let their children fly. He had a son who, he hoped, would join the R.A.F. in two or three years. Propaganda was wanted, and the Air League had been asked to collect money for propaganda. He hoped people would be asked to dip their hands into their pockets, deep and often.

Col. Mervyn O'Gorman referred to the 34 bodies mentioned by Capt. Acland, and said that he hoped the new one, the 35th, would not adopt an executive attitude and would not go in for more rules. He referred to the May Committee and the "saving" of £20,000 on research. Research was an entity, and one could not reduce it in one place without affecting numerous other sides. Reduce research and one reduced the chances of reducing accidents. He would plead that the support to research should be restored as soon as it was possible when the present abnormal financial conditions had improved.



**SAFETY IN THE AIR :** His Royal Highness the Duke of York inspected the aerodrome building at Croydon, and the Handley Page "Horatius," on the occasion of the Inauguration of the Air Safety Section of the National Safety First Association on May 5. (FLIGHT Photo.)



# Private Flying & Gliding

## THE ANTWERP DISPLAY

**M**R. REX NEWMAN, the Secretary of the Committee which organised the Display at Antwerp, is to be congratulated and, moreover, is to be congratulated in no stinted fashion, for the result of his labours was extraordinarily satisfactory to all concerned.

The Display Committee was a joint one formed from members of the Antwerp British Colony Association and the Antwerp Aviation Club.

The aerodrome at Deurne is, of course, a commercial airport, and as such there were air liners continuously coming and going; so it speaks well for the organisation that they were able to hold their show without disrupting the traffic; actually, 155 aircraft took off from the aerodrome on Saturday! Whenever an air liner arrived during the Display, the programme was stopped and a running commentary was broadcast in both French and English explaining the various formalities which were being carried out—excellent propaganda which the Sabena must have welcomed.

Besides some 25 British visiting aircraft, there were 17 private owners from Belgium itself, one from Holland, one from Paris, and four military aircraft (General Gillieaux, head of the Belgian Air Service; Chevalier Willy Coppens de Houthulst, Air Attaché at Paris and London; Group Air Attaché at Brussels and

de Houthulst, Air Attaché Capt. R. J. Bone, British Paris; and Flt. Lt. C.



On arrival from Brussels in the Westland "Wessex." Left to right: Maj. the Hon. W. Fraser, D.S.O., Military Attaché at Brussels; Mr. J. S. Summerscock, Secretary to the Legation; (in front) Mr. Rex Newman; (behind—head only) Col. Smeyers, Director-General of the Sabena; M. Max Orban, President of the Antwerp Aviation Club.

Staniland on a Belgian Air Force Fairey "Firefly," kindly lent for the occasion by the Belgian Government).

Everyone was loud in their praises not only of the way everything was run, but also of the Airport itself, together with the buildings and the landing area. The Club terraces were situated on top of the airport buildings, and from there the visitors were able to see the aircraft all lined up on the tarmac in front of them, those "performing" being in the centre, those from the U.K. on the right, and those from other countries on the left. At one time there were 47 aircraft there, of which 31 were of British design and manufacture; it could truly be said, therefore, that the Display was a British Aviation Day for Antwerp. Two of the pilots who were particularly popular were Miss Winifred Brown, whose "Avian" is now a common sight at Antwerp, and Miss Amy Johnson, who was prevailed upon to say a few words through the microphone.

About 3 p.m. a Sabena "Wessex" arrived from Brussels with Maj. the Hon. W. Fraser, the Military Attaché, representing the Ambassador; Mr. J. S. Summerscock, Secretary of the Legation; and Col. Smeyers, Director General of Sabena.

Thereafter the visitors were all presented to Maj. Fraser. The programme itself went without a hitch from first to last, and consisted largely of aerobatics and demonstrations



A view of the airport buildings, showing the crowds on the Club terraces, in the foreground are the competing aircraft.

of the visiting aircraft. The aircraft which took part were:—"Redwing," "Avian," "Moth," "Tiger Moth," "Westland," "Wessex," "Desoutter," "Arrow," "Active," "Puss Moth," "Spartan," "Mailplane," "Comper," "Swift," "Fairey," "Firefly," the pilots being Flt. Lt. N. M. S. Russell, Miss Brown, M. Léon Stampe, Mr. H. Buckingham, M. Cocquyt, M. Léon Aerden, F/O. H. H. Leech, Mr. Rex Hayter, Lt. Col. L. A. Strange, Flt. Lt. C. Clarkson, Flt. Lt. C. Staniland. In spite of the hard work of the firm's engineers, the "Tiger Moth" of the Standard Telephones & Cables, Ltd., was unable to give the demonstration of wireless communication when flown by Mr. H. Samuelson, due to the interference of the large metal hangars.

About the actual displays one can say little, for the excellence of the pilots is too well known to need comment, and as their display was naturally limited to the capabilities of the aircraft they were flying, it would be foolish to compare the neat, finished, prettily executed aerobatics of the pilots flying, say, the Arrow "Active" or the Comper "Swift" with the astounding sort of performance put up by Staniland on the "Firefly"—for example, he proceeded to do an upward spin straight from the take-off!

After the Display there was, to use the local phrase, Vols de vulgarisation et baptêmes de l'air. Summing up the show, we cannot do better than quote the words of a local reporter, who said: "Cette magnifique fête aérienne anglo-belge, au cours de laquelle les ailes britanniques donnèrent un si merveilleux témoignage de leur essor, fait penser qu'à côté de l'adage séculaire: Britannia rules the Waves, on peut hardiment en ajouter un autre: Britannia rules the Air."

### AIR PAGEANT AT TEMPELHOF

The Aero Club of Germany will be holding an Air Pageant at Tempelhof on June 12 to celebrate the opening of their new club premises there, and they are expecting a large attendance of private owners from their affiliated clubs.

They send through the Royal Aero Club a cordial invitation to all British private owners. All inquiries should be addressed: Aero Club von Deutschland, Blumeshof 17, Berlin, W.35.

### AT BROXBORNE

The aerodrome at Broxbourne has now been increased by the addition of some ten acres at the eastern boundary. This extra area should be fit for landing on within a fortnight. Mr. Roger Frogley has now been appointed Assistant Pilot Instructor, and he will devote his whole time to the service of the club. Arrangements have been made with Mr. John Stark for the use of his "Moth." This will make the aircraft available, three "Moths" and one "Desoutter." Two horses have been acquired for regular riding practice as well as half-a-dozen unbroken colts. Clay pigeon shooting is also an addition to the amenities of the club, this being available in a field adjoining the aerodrome. The club wish to receive challenges for shooting matches. The membership of the club is now some 200, and in view of this and of the fact that the staff has been increased, activities will not be suspended on Mondays. Flying will therefore be possible on seven days a week.

### FOR THOSE TRAVELLING ABROAD

The following hints to pilots who are touring abroad are taken from the "Elevator," the journal of the Lancashire Aero Club, and those who follow them would avoid very considerable trouble, not only to themselves, but to the officials concerned, in all places:—(1) Always obtain all necessary visas, permits and other papers that might possibly be necessary before leaving London. (2) Always take a supply of English money as well as any form of travellers' cheque you may fancy in case of a forced landing in an out of the way spot. (3) It is advisable to take emergency rations in case of a bad landing in wild country. It may take a day or so to get help if anyone is hurt. (4) Be careful to find out whether you may safely carry a camera, sealed or unsealed, through the places you intend to visit. (5) It may not be necessary to spend a small fortune in hire of maps in England, as they may be easily obtained much cheaper on the way, but whatever happens make sure of having accurate ones for even the shortest hops. (6) Although Shell petrol and oil are obtainable everywhere, it would be much better if it could be bought before starting to avoid being robbed when using foreign money.

### THE HOUSEHOLD BRIGADE FLYING CLUB

The Household Brigade Flying Club will be holding their annual meeting at Heston on Wednesday, May 18. The programme which has been arranged is a very comprehensive one, including demonstrations of a large number of commercial and service machines as well as the final of "Gwyn Madocks" Cup competition. Joy riding will be possible after completion of the programme on a "Fokker" flown by Capt. C. D. Barnard.

### BROOKLANDS

Following Group Capt. Baldwin's lecture before the R.Ae.S. on "Flying Instruction," the Directors of Brooklands School of Flying have very appropriately decided to reduce their rates for advanced flying instruction. Pupils of the school have always been encouraged to take advanced dual after going solo, and by these new rates it is hoped that this system will be still further made use of. During the B.A.R.C. meeting on Whit-Monday Maj. "George" Bulman will give a flying display on a Hawker "Fury." A memorial trophy has been presented to perpetuate the memory of the late Chief Instructor, Mr. Ted Jones, and this will be flown for at Brooklands in an annual air navigation competition; details of this will be published at a later date.

Over 30 hours' instructional flying were carried out last Sunday, and Mr. J. W. S. Fowler made his first solo. In order to assist the staff organisation, it is requested that pupils requiring lessons before 9 a.m. or after 8 p.m. would advise the control office in advance.

At the G.A.P.A.A.N. meeting, which is being held on May 28, Maj. Bulman will demonstrate the Hawker "Fury," and Flt. Lt. Staniland the Fairey "Firefly." It is particularly desired that unusual machines shall be on show at this meeting, and if anyone therefore knows of any old or unusual machines, they are asked to communicate with the Display Secretary. Prizes for the various events have been presented by the *Tatler*, E. B. Meyrowitz, Ltd., Gale & Polden, Ltd., Roberts, Ltd., and Austin Reed, Ltd. Flying will commence at 1.30 p.m., with the start of the London-Newcastle race for the *Evening World* Trophy, entries for which have already closed.

### HENLYS' RALLY AND GYMKHANA

At Heston on Saturday, June 4, Henlys, Ltd., are staging a rally and gymkhana at Heston Airport, commencing at 2 p.m. Admission will be free of charge and car-parking arrangements are provided by the Automobile Association. Starting with a Concours d'Elegance, there will be displays of flying interspersed with various humorous events in which cars will take part. Entry forms for the various races can be obtained from Henly House, 385, Euston Road, London, N.W.1, and these must be forwarded before May 19.

### B. G. A. MOVE

Those interested in gliding should note that the offices of the British Gliding Association have now been moved to more commodious premises at 19, Berkeley Street, London, W.1 (Mayfair 4032), to which address all communications should now be addressed.

### CINQUE PORTS FLYING CLUB

With an improvement in the weather, the number of flying hours put in by the members of the Cinque Ports Flying Club has naturally gone up. During the past week Mr. Fellowes obtained his "A" licence and Miss Drinkwater completed the tests for her "B" licence. She managed her night flight satisfactorily on May 5, arriving at Lympne in 38 min. after leaving Croydon, without trouble. Several club members went over to the Antwerp meeting, including the Misses Aitken and Giles and Messrs. Trewlawny, Waller and Gubbins. One advantage which the club has over others is the fact that Lympne is an airport, and its members therefore have an opportunity of seeing a wide variety of aircraft, since the majority of aircraft proceeding abroad circle Lympne, even if they do not land there.

### READING AERO CLUB

It has been found necessary to change the date of the At Home of this club from June 5 to June 18. The President, Lord Northesk, together with Lady Northesk, has again consented to preside on the occasion. The Ladies' Race will once more be the chief item on the programme, and this is being supplemented by others, including a mystery item which is believed to be quite unique.



Mr. P. H. S. Chang, who recently obtained his "A" licence with the Phillips and Powis School, has returned to China to open a flying school there. Mr. Chang has proved himself to possess capability considerably above the average, and there is little doubt that he will succeed in his enterprise. The Sales and Repair Departments have been very busy, the latter having just collected a "Moth" which had been crashed at Alexandretta. This it is hoped will be flying in a few weeks' time.

THE LONDON AEROPLANE CLUB

The London Aeroplane Club had their flying interrupted by the visit of Sir Alan Cobham's National Aviation Day Display to Stag Lane, but despite this the club's aircraft were giving joy rides continually during the evening until dusk. Visitors during the week included Mr. Michael Marinescou, a Roumanian pilot, who was given a demonstration in blind flying; and Mr. Andrew Ivanoff,

an air mail pilot from the U.S.A., who regularly flies on the Boston-New York route. Count Johnson Noad and Mr. John Amery have now returned from Central Africa, where they have been making a film of native life.

LONDON GLIDING CLUB

During the week-end, May 7 and 8, well over 100 launches were made from the top of the Downs. Over six machines were used for the purpose, while on the flat, for *ab initio* pupils, were two more gliders of the primary training type. The wind was not particularly good for soaring, but nevertheless both the "Hols der Teufel" and the "Dagling" were able to make several trips of considerable length along the ridge and back again. The "Hols der Teufel" in particular seems to revel in bad conditions, and her speed range is really remarkable. During Sunday evening Flt. Lt. J. Armour visited the club and tried both the "Prüfling" and the "Professor II."

THE "MORNING POST" CROSS COUNTRY AIR RACE

BELOW is the list of entries for the *Morning Post* Air Race which is being flown from Heston Airport on May 21. Prizes include the *Morning Post* Cup and Replica, a Reid-Sigrist Turn Indicator with accessories fitted free at any London aerodrome, a Thornton-Norris Air Log also fitted free at any London aerodrome, both presented by the manufacturers, and a

complete set of A.A. maps presented by the British Aviation Insurance Co., Ltd. Other offers of prizes have been made, but it was decided to restrict the prizes to those appropriate to the event. The *Morning Post* Cup is based on a design of Edward Vincent, a London silversmith, the original being dated 1737, both the Cup and replica are being made by hand:

Name of Entrant	Machine	Pilot
Maj. J. E. Shaw .. ..	Avian .. ..	Entrant.
G. Baillie .. ..	Moth .. ..	Entrant.
H. G. Selfridge, Jnr. ..	Puss Moth .. ..	Entrant.
W. L. Everard .. ..	Puss Moth .. ..	Miss W. E. Spooner.
Sir Kenneth Crossley, Bt.	Moth .. ..	Entrant.
F/O. H. Bailey .. ..	Comper Swift .. ..	Entrant.
L. Lipton .. ..	Moth .. ..	Entrant.
A. C. M. Jackaman .. ..	Moth .. ..	Entrant.
The Hon. Lady Bailey ..	Puss Moth .. ..	Entrant.
N. A. Brett .. ..	Avian .. ..	Entrant.
W. W. Lyle .. ..	Moth .. ..	Entrant.
E. Cohen .. ..	Avian .. ..	Entrant.
Capt. J. A. F. Dalgety ..	Moth .. ..	Entrant.
C. H. Tutt .. ..	Moth .. ..	Entrant.
The Hon. M. Hachisuka ..	Moth .. ..	Entrant.
J. Grierson .. ..	Moth .. ..	Entrant.
Flt.-Lt. C. Clarkson ..	Comper Swift .. ..	Entrant.

Name of Entrant	Machine	Pilot
F/O. H. R. A. Edwards ..	Martlet .. ..	Entrant.
Lord Grimthorpe .. ..	Puss Moth .. ..	Entrant.
The Hon. F. E. Guest ..	Hawker Tomtit .. ..	F/O. E. C. T. Edwards
Spartan Aircraft, Ltd. ..	Spartan 3-Str. .. ..	Lt.-Col. L. Strange.
H. C. Mayers .. ..	Comper Swift .. ..	Entrant.
Flt.-Lt. D. V. Ivins .. ..	Bristol Fighter .. ..	Entrant.
H. E. S. Pritchett .. ..	Redwing .. ..	Entrant.
R. L. Bowes .. ..	Moth .. ..	Entrant.
F. D. Bradbrooke .. ..	Civilian Coupé .. ..	Entrant.
Car Maintenance Club, Ltd.	Civilian Coupé .. ..	L. S. Dawson.
Flt.-Lt. G. H. Stainforth ..	Spartan Arrow .. ..	Entrant.
Lady Apsley .. ..	Blackburn Lincock ..	Capt. T. N. Stack.
Westgate Motor House Co.	Moth .. ..	W. R. Walwin.
C. F. Almond .. ..	Avian .. ..	Entrant.
Miss F. Crossley .. ..	Comper Swift .. ..	Entrant.
Miss Sale-Barker .. ..	Moth .. ..	Entrant.
H. R. Law .. ..	Widgeon .. ..	Entrant.

Airisms from the Four Winds

To Repay their Hospitality

FOREIGN aero clubs and their private-owner members have frequently, in the past, extended the greatest hospitality to large numbers of aerial visitors from this country. Up to the present the return for this has been rather in the nature of private effort than of the official type which always characterises such functions abroad. Now, however, a movement has been started to "do the thing" properly and the foundations have been laid of an organisation which will, it is hoped, place us in a more equable position. So far a committee has been formed, though more members will be co-opted as necessity arises, whilst the preliminary details have been gone into most carefully. Those who have identified themselves with this movement include:—Col. F. C. Shelmerdine, Mr. Loel Guinness, Mr. Ivor McClure, Mr. Nigel Norman, Mr. Maurice Jackaman and many other prominent people. Early in the proceedings it was suggested that some 60 or 70 foreign visitors could easily be entertained from a Thursday mid-day, the time when it is proposed that they should arrive, until the following Sunday morning, for quite a moderate sum, and the subscriptions already received show that the committee are satisfied that the remainder will be forthcoming. Naturally the idea has been very carefully considered, and it was realised that the sum generally accepted as necessary for an occasion like this has been ludicrously exaggerated; a certain minimum will, however, be required, and all those who wish to associate themselves with and back up the organisers are asked to send their subscriptions, however small, to A. C. M. Jackaman, c/o The Royal Aero Club, 119, Piccadilly, London, W.1. (No list will be published.) Ten shillings per head from all

the private owners in the country would go a long way towards balancing the expenses budget and putting "success" to the meeting. The programme which has been suggested (it is too early to go into the actual details as yet) will include visits to places of typical English interest, a short but comprehensive air display at an airport near London and one or more official banquets. The air display will probably include two or three races and some competitions of the type which have been organised when our pilots have visited the various foreign aerodromes. Whatever is ultimately decided upon, everyone may rest assured that the "Rally," as it will probably be called, will be a credit to our aviation fraternity and will thus further strengthen the already strong bonds of fellowship which exist between those who fly, whatever their nationality.

The King's Cup and Siddeley Trophy

AN additional entry has been received by the Royal Aero Club for the King's Cup Air Race, which will be flown on July 8-9, viz., Sqd. Ldr. W. Helmore, Hawker "Tom Tit" ("Mongoose IIIc"), piloted by the entrant. The Siddeley Trophy will be awarded to the Light Aeroplane Club whose representative is highest in the placings of the King's Cup. To qualify for this trophy the aircraft entered in the King's Cup must be the *bona fide* property of the member of the club and the owner must be the pilot. The following Clubs have entered:—Hanworth Club (Air Cdr. the Rt. Hon. F. E. Guest, D.S.O., M.P.); Herts & Essex Aeroplane Club (J. G. Ormston); Lancashire Aero Club (Miss Winifred S. Brown); Leicestershire Aero Club (Miss W. E. Spooner); London Aeroplane Club (Hon. Lady Bailey and A. C. M. Jackaman); Newcastle-on-Tyne



Aero Club (W. L. Runciman); Royal Naval Flying Club (Lt. Com. G. Rodd, R.N., Lt. C. R. V. Pugh, R.N.); Skegness and East Lincolnshire Aero Club (M. D. L. Scott). Representatives must be nominated to the Royal Aero Club not later than May 18.

#### "Graf Zeppelin's" Record Trip

THE German airship *Graf Zeppelin* is still adding to her list of Atlantic flights. She left Friedrichshafen for Brazil on May 2 on her fourth round trip this season, and duly arrived at Pernambuco on May 4. Setting out on the return journey on May 7, and in spite of being unable to moor for five hours owing to strong winds, the airship completed the trip to Friedrichshafen in 77½ hours—in record time—on May 9.

#### The "Akron" Fights a Storm

DURING a flight from Lakehurst to San Francisco the U.S. Navy rigid airship *Akron* encountered a violent thunderstorm over Texas on May 9. Efforts were made, with the help of most of the male population, to moor the airship at San Angelo, but without success, the airship drifting on over Christobal. Later it was reported that the *Akron* was riding the storm successfully and proceeding towards San Antonio.

#### Another Atlantic Attempt?

It is reported that Capt. Erroll Boyd, who flew the Atlantic in 1930 with Lt. Harry Connor, is to attempt a solo Atlantic flight from America to Rome this month.

#### By Autogiro to the Cape

MR. J. N. YOUNG, who is attempting to fly from England to the Cape in an Autogiro, reached Auxerre, in Central France, last week. He left Hanworth Aerodrome on April 25.

#### To Speed up Amsterdam-Batavia Service

READERS of FLIGHT will be interested to learn that a high-speed three-engined machine is now being designed by H. Pander & Zonen, of The Hague, Holland, for the Amsterdam-Batavia air route. The new machine will be of the three-engined class, and has a designed cruising speed of about 300 km./h. (186 m.p.h.). It is estimated that this will enable the machine to cover the distance between Holland and the Dutch East Indies in three to four days. Mr. Pander, Senr., will be remembered by our readers as the constructor of some very fine light aeroplanes, but this will be the first time that he enters the field of high-power, high-speed commercial aircraft. All will wish him every possible success in his undertaking.

#### A Galway-London Service?

FURTHER negotiations for the opening of a Galway to London via Dublin air service are understood to be taking place under the auspices of the Galway Transatlantic Company, which was constituted last year to speed up mail and passenger transport between London and New York by means of a steamship service from America to Galway and thence by air to London. A site was suggested at Oranmore, some miles east of Galway, but this would entail land transport and negotiations with the Free State Army Air Corps, who control the land as an emergency landing field. It is now proposed, however, to utilise a site at

Furbough, adjacent to the port, which is remarkably free from fogs. One of the principal figures who are said to be interested in this scheme is a well-known Irish civil engineer, Senator Sir John Purser Griffith, one time Professor Harbour Engineering at Trinity College, Dublin. It will be recalled that some few years ago Col. Russell and F/O. Summers flew mails from Galway to London and back to Galway in the same day. Frequent suggestions regarding the possibilities of a Dublin-London service have been made, and it is generally understood that the route would be far more economical if it were extended to either Cork or Galway to co-operate with the Atlantic liner traffic.

#### An Irish Aerodrome Scheme

SCHEMES for the establishment of an airport at or near Cork have recently been revived in Ireland, and we understand that a site at Ballyquirke, about 12 miles from the port of Queenstown, is to be the subject of investigations by the interested parties, believed to be Cork business men. Ballyquirke was laid out as an aerodrome during the Great War and it was the intention to use it as a base for airships of the United States Navy; although a steel lattice hangar was constructed by an English firm, no airship ever arrived, and the hangar was dismantled about 18 months ago. The representatives of a German company who visited Ballincollig Aerodrome, near Cork, some time ago also paid a visit to Ballyquirke, but voiced no opinion on the possibilities of the site. A railway siding provides direct access by train to Youghal and Cork from the site.

#### The Long-Range Monoplane

THE Under-Secretary of State for Air stated in the House on April 20 that there was no intention to use the long-range Fairey (Napier) monoplane for experimental non-stop air mail services to Egypt, India, and other places, pending its flight to the Cape. That machine had to undergo further tests and possible improvements, and the use suggested would in any case impair the high efficiency which was so essential for the special long-range experiment.

#### Highways Hotels, Ltd.

A VENTURE which should be of interest to private pilots in particular is that of Highways Hotels, Ltd., whose registered office is 95, Gresham House, E.C.2. The directors of this company, Messrs. F. R. Walker and R. E. L. Beere, have as their object the establishment of a chain of aviation hotels all over the country. Each of these hotels it is proposed shall have its own aerodrome and shall provide a unique service which will include all that one usually would like to find in an hotel but does not. The first of these hotels, it is hoped, will be founded 50 miles from London. Another section of the same company has offices at 23, Chilworth Street, Hyde Park, W.C., telephone (Paddington 8977), and is open to take on work in aerial photography, air survey and private charter of aircraft. At a later date it is hoped that this department will be in a position to establish flying clubs at one or more of the hotel aerodromes.



A NEW SARO "CUTTY SARK": Fitted with a direct-drive Armstrong-Siddeley "Lynx" engine, this machine has been equipped with extra tanks and special instruments, and is being flown by the Japanese pilot Yoshihara from San Francisco to Japan—as previously reported in "Flight."

# Airport News

## CROYDON

**F**ULL summer services commenced on Monday, and flying is in full force now for the whole 24 hours of the day. Another week of dreary and cold weather has, however, given the aerodrome an outlook more like November, except that November was warmer than it is now.

On Tuesday the weather was so bad, especially in the evening, that nearly all the machines were held up *en route*, several failing to reach England at all.

On Thursday, the first official visit of Royalty to the Air Port took place, when H.R.H. the Duke of York spent several hours here in connection with National Safety Week, particulars of which are referred to elsewhere in this issue. His Royal Highness was introduced to Capt. Wilcockson, the pilot, who showed him over the H.P. 42, explaining the various controls and instruments. He then inspected the lighting system, finally paying a visit to the control tower, where he was shown further intricate secresies of traffic control by wireless, etc. In this he was ably guided by Mr. Jeffs, the Air Ministry officer on duty at the time.

On Friday, two specials ordered by the Press, were rushed to Paris, after news had been received of the shooting of the French President. Messrs. Hope and Birkett left in their "Puss Moth," and Capt. Ledlie, of Personal Flying Services, in a Desoutter. Hope and Birkett left on the return journey about 9 p.m., reaching Croydon soon after 11 p.m. Capt. Ledlie, leaving Paris soon after, had, after flying for 2½ hours, to return there owing to bad weather. This is another example of the help given by the control tower at Croydon when a machine carries wireless. The "Puss Moth" has recently been fitted with wireless, and was able to get through with its pictures in spite of weather. The Desoutter is not fitted with wireless, and, despite Capt. Ledlie's efforts, was compelled to turn back.

It rather goes to prove that a commercial airline or taxi service, in order to give 100 per cent. service to its customers at any time of day or night in any weather, must have machines fitted with wireless.

The old aircraft factory adjoining the aerodrome is beginning to look exceedingly smart, having been transformed from a scene of utter desolation to a very attractive group of buildings. All the grounds have been cleaned up and gardens tidied. An estate office has been opened on the estate, and various sections of the buildings have already been either sold or let. In time no doubt it will become a very busy section. One curious thing is that no aircraft firms have so far secured premises. Yet in the parts already occupied nothing is produced that is useful in the manufacture of aircraft.

The joyriding companies were very busy on Sunday during the brief respite in the weather, but more bad weather is on the way, according to the weather forecasts.

An unpleasant episode was experienced on the 12.30 p.m. Imperial Airways outward service to Paris on Monday. The machine, a Handley Page 42, had the wireless aerial struck by lightning. A nasty explosion was heard, and it resulted in the cockpit windows being blown out, two propellers damaged, and various holes torn in the top plane and one in the fuselage near the baggage compartment. Fortunately, nobody was hurt, but naturally the passengers were somewhat concerned, and Capt. O. P. Jones, the pilot, who piloted the Prince of Wales on two occasions, after reassuring those on board, turned the machine and brought it safely back to Croydon. Another H.P. 42 was immediately placed on service, the load was transferred and proceeded with passengers to Paris.

Traffic figures for the week:—Passengers, 997; freight, 44 tons.

P. B.

## FROM HESTON

**S**UNDAY, May 1.—The Director of Civil Aviation—Col. F. C. Sheldermine—accompanied by Mrs. Sheldermine, paid a visit to Heston after tea and spent some time inspecting the recently completed extensions to the Airport buildings.

Mr. A. C. M. Jackaman arrived late in the evening on returning from Paris.

Henlys, Ltd., report having sold G-AAVP (Avro "Avian") to Mr. Bancroft, who has just arrived from U.S.A., and G-EBUF (Hermes II "Moth") to Mr. J. de B. Carling.

**Monday.**—Among the several private owners who returned from Paris was Mrs. Vereker in her "Puss Moth."

Visct. Borodale, son of Earl Beatty, qualified for his "A" licence.

**Tuesday.**—Capt. G. W. Ferguson, of Ferguson's School of Navigation, during the morning took two pupils on cross-country flights.

The Airwork School of Flying had to cancel lessons after noon, as the weather became impossible for instruction.

During the afternoon, in spite of high winds and some rain, several members of the Household Brigade Flying Club carried out practice for the landing competition to take place during the Brigade Flying Meeting to be held on the afternoon of May 18.

**Wednesday.**—Lord Carlow landed at Heston in a "Cutty Sark."

Ft. Lt. Christopher Clarkson, manager of Selfridges, Ltd., Aviation Department, returned to Heston. He left Heston on April 26 to proceed to Italy. We understand he is writing an account of his experiences, but he briefly described the trip to us. He flew non-stop from Paris to Lausanne, and from Lausanne to Milan *via* the Simplon Pass. On his return he flew from Milan to Cannes in two hours.

**Thursday.**—Lady Marjorie Dalrymple Hamilton took her first flying lesson to-day with Capt. V. H. Baker.

Mr. Harbin returned from Paris in his "Puss Moth."

The new aviation office, next door to the Customs, was

occupied to-day by Capt. Baker and his staff. From the several unusual features among the fittings many members could see the hand of Mr. Nigel Norman, who revels in novel designs.

**Friday.**—Five machines cleared Customs, some with two passengers, and proceeded to Antwerp, for the aviation meeting to be held there on the 7th. They were fairly representative, consisting of two "Puss Moths," a "Redwing," a Comper "Swift" and a "Spartan."

Mr. Ledlie, of Personal Flying Services, Ltd., left late in the evening for Paris in the "Desoutter," and returned to Heston at 11 a.m. the following morning.

Henlys, Ltd., report the sale of a three-seater "Spartan" to the B.A.T. Co.

**Saturday.**—Lady Howard de Walden and her daughters, Miss Bronwen and Miss Priscilla Scott Ellis, resumed their flying lessons this week.

Heston was visited to-day by 68 members of the Institution of Locomotive Engineers.

Customs had a busy day, clearances being:—Out: One to Brussels, two to Ostend, one to Jersey, three to Antwerp, one to Rotterdam and one to Paris. In: One from Paris and two from Antwerp.

**Sunday.**—Heston presented a very animated scene from early morning, and during the day private owners' machines were in such numbers that it had the appearance of a rally.

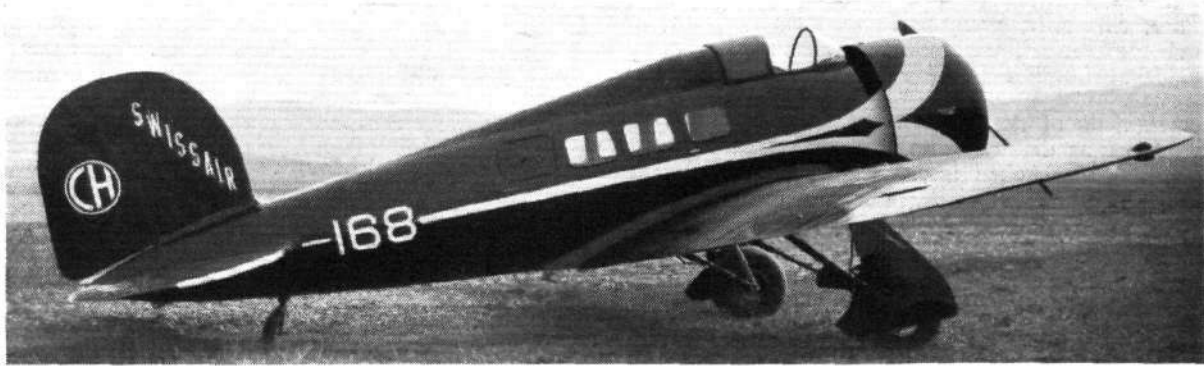
Eight machines—one piloted by Miss Amy Johnson—returned from Antwerp, where they had been to attend the meeting organised by the Antwerp Aviation Club. All pilots were full of praise for the excellent manner in which the meeting was organised under the control of Mr. Rex Newman, and also of the hospitality shown them, which left nothing to be desired.

Among the visitors to Heston—who were extremely numerous—were noticed Capt. H. Balfour, M.P., and Mr. J. A. Mollison, while Miss Fidelia Crossley arrived on her new Comper "Swift" G-ABUA.

Mr. Harbin proceeded to Paris in his "Puss Moth" with two passengers, returning during the evening.



# Air Transport



## SPEEDING UP OF THE AIR MAIL

"Swissair" Company puts New Machines on Zurich—Vienna Route

**F**OR the first time in the history of commercial flying American aircraft are being used on an European air route. The route in question is, as recorded in *FLIGHT* of February 5, 1932, that between Zürich and Vienna, *via* Munich, and the company which operates it is the Swiss company "Swissair."

Hitherto, what with relatively long stops at Munich, the route speed has been low, 142 km./h. (88.2 m.p.h.). By putting the new fast machines on the route the speed has been increased to the somewhat impressive figure of 260 km./h. (161 m.p.h.). It should be realised that this is the actual time-table speed, *i.e.*, the speed made good over the route, including the stop at Munich. By cutting down the time for refuelling a further saving in time is, of course, obtained, so that the increased route speed is not due entirely to the higher cruising speed of the new American machines, but in part to the shorter stay at Munich.

The time-table drawn up for the "Swissair" express service between Zürich and Vienna is as follows: Leave Zürich 9.10 a.m.; arrive Munich 10.10 a.m.; distance, 150 miles. Leave Munich 10.20 a.m.; arrive Vienna 11.40 a.m.; distance, 229 miles. The times for the return journey are: Leave Vienna 2.15 a.m.; arrive Munich 3.55. Leave Munich 4.05 p.m.; arrive Zürich 5.10 p.m.

The Zürich business man with business to transact in Vienna is thus able to leave in the morning, attend to his affairs in Vienna (the stay is of approximately two hours, allowing for the journeys to and from the aerodrome). At Munich the time available between the arrival of the machine in the morning and its return to Zürich in the afternoon is even longer. It is believed that the number of business men who will wish to avail themselves of this new rapid travel will be such that on most flights the machine will carry its full complement of four passengers.

The new express air service came into operation on May 2, and the machines used (two) are, as previously recorded in *FLIGHT*, Lock-

heed "Orions," with 575-h.p. Wright "Cyclone" engine. The machines are low-wing cantilever monoplanes, and have retractable undercarriages operated hydraulically.

The main data relating to the Lockheed "Orion" are as follows:—Length o.a., 8.50 m. (27 ft. 10 in.); wing span, 13.0 m. (42 ft. 7 in.); wing area, 27.3 m<sup>2</sup>. (294 sq. ft.); tare weight, 1 630 kg. (3,585 lb.); disposable load, 820 kg. (1,805 lb.); gross weight, 2 450 kg. (5,390 lb.); wing loading, 18.35 lb./sq. ft.; power loading, 9.38 lb./h.p.

The maximum speed of the "Orion" is given as 365 km./h. (227 m.p.h.), the cruising speed as 290 km./h. (180 m.p.h.), and the landing speed as 96 km./h. (60 m.p.h.). Probably landing speed is nearer 75 m.p.h.

The nominal power expenditure per paying passenger appears very high, but as the cruising speed is a large percentage below the maximum speed, it is fair to assume that the power required at cruising speed is a comparatively small percentage of the maximum power, so that the actual power used for cruising is probably nothing like as extravagant as the maximum power figure would indicate.



WITH UNDERCARRIAGE RETRACTED: One of the Lockheed "Orions" of the "Swissair" company as it appears in flight.

## SUMMER AIR SERVICES

**W**ITH the arrival of summer (as per calendar!) the various air operating companies have been adjusting their passenger mail and freight air services accordingly. Below we give a summary of the activities in this direction announced by some of the concerns operating various air services in Europe.

Incidentally, the Postmaster-General announces that the spring edition of the Air Mail leaflet giving particulars of the summer air mail services available for correspondence posted in this country has now been issued. Copies of the new leaflet are being sent to regular users of the service, and can also be obtained free of charge at any

Post Office. Regular users of the air mail services are advised to consult the new leaflet as a number of changes have been made.

### Imperial Airways.

Summer services on the great international network of European airways, which have now been brought into operation, are, this year, so inter-connected as a result of international conferences, that they provide regular daily air services from London to as many as 130 European cities and towns.

No fewer than 69 of these Continental air destinations, some in countries as distant from Britain as Spain, Italy and Sweden, can be reached in less than 12 hours, while there are now few districts in the whole of Europe which are more than two days from London by air.

The summer time-table of the Imperial Airways' European services just issued shows air routes radiating from London to France, Germany, Belgium, Holland and Switzerland, which connect with the air lines of other European countries to form this fast Continental air network.

This year air transport takes on yet another phase, in which all the luxury of modern travel are allied with the speed, safety and reliability of the high-powered multi-engined air express. On each of the great 4-engined machines operating to and from London—which are claimed to be the largest and most luxurious of their kind in the world—two uniformed stewards are now carried, and are able, from their well-equipped buffets, to supply travellers with a complete service of mid-air meals and refreshments.

On the early morning service to Paris, for example, leaving the London air station at 8.30 a.m. breakfast is served while *en route* to the French capital, and on the mid-day service to and from Paris, a four-course lunch is provided during the flight. On the new summer evening service, which leaves the London air station at 6 o'clock and reaches the Paris air port at 8.15 p.m., dinner is now served regularly while the airliner is flying smoothly at more than 100 m.p.h.

The saloons of these big multi-engined machines are as large and as luxuriously equipped as those of a railway Pullman car; while the placing of the engines away from the body of the machine and the use of sound-deadening material in the hull structure, now makes flying so quiet that conversation is easily possible without any raising of the voice.

The accelerated time-schedules which are possible, owing to the use of these fast and more powerful machines, now makes it possible to leave London in the morning for Paris, take breakfast while in the air and then spend nearly seven hours in the French capital before taking the return air service for London, a dinner being enjoyed while aloft, and the airport of Croydon being reached at 8.15 p.m.

It is also possible for a business man with an urgent appointment in Switzerland to fly to Basle by morning service, have an interview there on any pressing question which may have arisen, and then fly back in time to reach London again that same evening.

There are now two weekly Empire air mail departures from London. The 8,000-miles service to Capetown leaves the Croydon airport each Wednesday at 6 p.m., and by relays of aeroplanes and flying-boats reaches Capetown 11 days later; while the weekly India air mail is scheduled to ascend from Croydon each Saturday at 6 p.m., the 5,000 miles flight through to Karachi being accomplished in six days.

Now that Imperial Airways are operating a complete through route to Capetown, as well as India and Continental services, the Company's fleet of powerful multi-engined aircraft is now flying regularly over approximately 14,000 miles of aerial routes, along which there are as many as 50 main and intermediate air stations.

By the way, Imperial Airways have issued a booklet entitled "All Ways by Airways," which is at the same time amusing and instructive. In this H. Stuart Menzies tells the reader, with the help of humorous pen sketches by W. M. Hendy, J. S. Holland and Wyndham Payne, all about the various Imperial Airways services in a light and readable style. *Bona fide* passengers can obtain this booklet free of charge, but to others it is supplied at 6d. net.

### New Air Union Services to Switzerland

Switzerland has been for years one of the greatest tourist centres, and since the war Geneva, by reason of

the many Conferences held there, has become the axis of world politics. Bearing this in mind, the French Air Union Co. considered that the existing travel services do not meet the actual requirements, and they therefore arranged that from May 2 their services shall run three times a day to Switzerland on weekdays. The fare on the old London-Paris-Lyons-Geneva service, which still leaves London at 9 a.m., has been reduced to £8 14s. An extension of this service is being made to reach Lausanne by 4 p.m. and Berne by 4.45 p.m. The new through service to Geneva and Lausanne arrives at 5.25 p.m. at Geneva and 6.15 at Lausanne, leaving London at 12 noon and Paris at 2.45 p.m. The route follows the Valley of the Seine, over the old town of Dijon, the Bourgogne valleys and the mountains of the Jura. There will also be a Basle and Zurich service, leaving London at midday by *Golden Ray*, connecting at Le Bourget with a Fokker machine and arriving at Basle at 5.30 and Zurich at 6.20. The fares on this service are: £7 10s. for Basle and £8 5s. for Zurich. Excess baggage charges on these services have been kept as low as possible, as it is realised that tourists as a class like to take plenty of luggage. An attractive tour of Switzerland can now be made, outward by the London-Paris-Lyons-Geneva-Lausanne-Berne-Zurich route and inward by the new through Basle-London route, spending two or three days at the different stops. It is not only the tourist or diplomat going to Switzerland who will find this service useful; travellers to Central Europe or Italy will find their journey considerably shortened by making the connection by night train at these points.

### Deutsche Luft Hansa

On May 1 the German Luft Hansa Company introduced its summer schedule. In this modifications have been made only on the internal domestic routes, but the international services are to be operated on the same scale as last summer. Some 44 passenger routes and four special mail and freight lines will operate between 30 foreign and 51 German centres. The daily flying operations of Luft Hansa machines during the summer will amount to 44,000 km.

The financial assistance granted to German commercial aviation has been considerably reduced, and this is responsible for the fact that a great proportion of the international lines are being operated in conjunction with foreign air operating companies. French, Swiss, Italian, Austrian, Czech and Danish companies are co-operating in about 9,000 km. of air lines—about 30 per cent. of the total distances covered by Luft Hansa.

The new summer schedule of Luft Hansa shows a number of improvements, based on the experiences gathered last year. Special mention in this respect may be made to the extension of the service between Germany and Italy. During the summer it will be possible to fly in daylight from Berlin to Rome or *vice versa*. This acceleration of the service is due to the fact that a new express line Berlin-Munich has been added to the already existing route which leads via Halle/Leipzig-Nuremberg/Fuerth. The new line covers the distance Berlin-Munich in 3½ hours. Starting in Berlin 7.30 a.m. the passenger arrives in Munich as early as 10.45 a.m. In the reverse direction the plane leaves Munich at 1.15 p.m. and arrives in Berlin 4.30 p.m. From Munich to Rome the route leads via Venice. To Milan passengers get on the tourists' route via Innsbruck-Bozen-Trient where connection is made to Rome. Flying time, Berlin-Venice, is 6½, Berlin-Rome, 9½ hours. The inclusion of Carlsbad into the route Berlin and Central Germany to Marienbad, which will be operated during the main travelling season is another innovation.

By shortening the flying and stopping times it has been possible to accelerate services. The trip from Berlin to Copenhagen via Stettin will thus be shortened by 25 minutes, Zurich-Munich, Berlin-Cologne, and Frankfurt-Paris by 15 minutes each.

Between Berlin and London two of the Junkers G.38 type registered under D. 2,000 and D. 2,500 will be operated during the summer months in the mixed passenger, mail and freight service. Each of these planes is able to carry 30 passengers.

The aero-bus service which, for the first time, was successfully introduced last year between Frankfurt-on-Main and Cologne, and which was much utilised by the public, will be operated, besides the regular service, for a much longer period than last year.



# The Industry

## A NEW SAFETY-BELT HARNESS

**T**HE safety-belt arrangement in aircraft cockpits excites a natural interest in the parachute manufacturer, for he is primarily concerned with the facility given to the airman for a rapid exit in a case of emergency.

Hitherto there has not—to our knowledge—been deliberate collaboration between the designer of safety belts and the designer of parachute equipment, no doubt partly due to the fact that the former has not had to take for granted that parachute equipment is always worn except amongst military and naval airmen. But now that the parachute equipment is generally accepted as a necessary part of the airman's gear—even if this does not mean that the principle is necessarily put into practice—there is every reason for the parachute designer to turn his attention to safety harness. Obviously, a parachute harness can lend itself to the dual purpose, that of harnessing the airman to his parachute and to his cockpit.

An example of what can be done in this direction is seen in the new "Irvin Safety-Belt Harness," which has just been introduced by the Irving Air Chute of Gt. Britain, Ltd. The ordinary Irvin parachute harness, with the Quick Release fitting, remains unaltered. The new Safety Harness is an additional feature, having its terminal points at four places on the parachute harness, one on each shoulder strap and one on each leg strap, indicated at "A" on our sketch. Its connections to the cockpit are at three other points, one behind the airman's shoulders and one on the floor on each side of the airman's seat, shown at "B." These side attachments can be made directly to the seat if desired, which is preferable, for instance, if

the seat is adjustable for an up-and-down movement. The simplicity in the method employed for making these cockpit connections makes it adaptable for any design of cockpit or seat.

In our photographic illustration we can see that the connection behind the pilot's shoulders is in this case effected by the introduction of a cable running between the fuselage fittings on each top longeron. Just as the four connections to the parachute harness are identical, so are these floor connections. One of the accompanying sketches shows that they consist of a simple chrome-nickel steel link and a clamp of thin gauge drilled for a bolt. In the photograph the connections have been made in this case by bolting the clamps to clips on the bottom longerons.

### Release Action

This Safety Harness, although so securely holding the airman to his cockpit whether flying normally or aerobating, will release him as swiftly and simply as his parachute is released from its pack. The fact that it links him not only to the cockpit, but also to the parachute harness, does not involve the least complication.

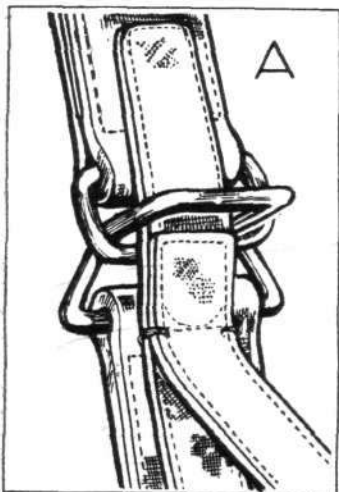
To obtain a clear idea of the release action, let us first glance at our sketch, which shows the connecting link on the harness. We see that the steel link at the end of one main strap is slotted through the steel link of the other main strap, and the links are locked by inserting another and narrower strap between them. When this latter strap is pulled out by hand, the two links simply slip apart, thus breaking a main connection.

As we have already said, there are four connections like this, two in front of the shoulders and one at each leg. Short stout lengths of the Safety Harness are sewn to the ordinary parachute harness straps at the four points, each with a metal link looped through, forming as it were the foundation pieces and permanently attached to the parachute harness. They come away as part of the latter when the airman leaves his cockpit for a jump, the main part of the Safety Harness remaining connected to the cockpit.

When the airman enters his cockpit and fastens on his Irvin parachute harness, he will have automatically fastened on his Safety Harness, but we will assume that the latter requires connecting to show how it is done.

He fits on his parachute harness and then the new Safety Harness. He does this by bringing the shoulder straps of the Safety Harness over his shoulders, connecting their links with those on the two foundation pieces attached to the front parachute harness straps, then inserts the narrower straps that hold the links together.

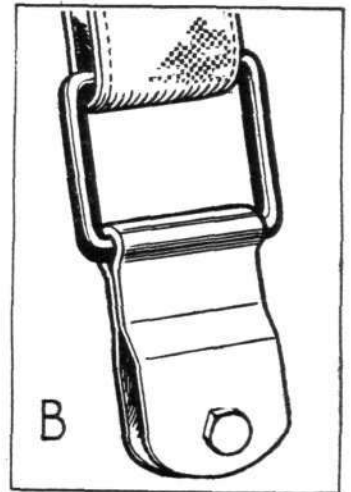
These narrow straps (which have short extensions to the foundation pieces merely to give them a connection) are simply joined together at their loose ends in front of the pilot by the aid of press studs. When he has linked the side straps into the foundation pieces on his parachute leg straps in the same way, the airman is firmly strapped in. He has completed the connections. Now to release himself he simply gives one sharp pull on the narrow straps snapped together in front of him. This immediately breaks the connections with the shoulder straps, and as he naturally moves forward to rise from his seat, the tension of the harness which is holding the leg straps in position is automatically relieved, so that the links there



Detail of the four quick release connections at A.



A view showing the pilot seated in the cockpit when wearing an Irvin Air Chute with the new safety-belt harness.



Detail of the three main connections at B.

fall apart, and the airman is entirely free.

Another feature of this harness is its adjustability. It has extension lengths which permit the airman to tighten himself in when he wishes to perform aerobatics, or to ease the straps as required.

Toggles ("C," see photo) are fitted in the harness in a position convenient to the hand on each side of the seat, and a tug on these lengthens the straps and thus eases their hold. Contrarily, a downward pull on side straps by the seat presses the airman down firmly. A short extension strap on the airman's right shoulder will enable him to lean right forward when it is pulled (see illustration), while a pull on a lengthening strap that sweeps round from the back and is simply tied to a nearby cockpit member will draw him back again.

Whatever attitude the aircraft assumes when the airman is stunting, or being badly bumped about in rough weather, the Safety Harness automatically enables him to maintain a correct flying position in his seat, while also permitting him full flexible body control and comfort. There is a special attachment which makes it possible to use the Safety Harness without necessarily wearing the parachute. Inquiries about this new Safety Harness should be sent to the Irving Air Chute of Gt. Britain, Ltd.,

Letchworth, Herts. This harness is approved by the Air Ministry.

#### MEYROWITZ LUXOR GOGGLES

LUXOR No. 10 model goggles have become exceedingly popular since their introduction by E. B. Meyrowitz, Ltd., 199, Regent Street, W.1, particularly because both the lenses and cushions are interchangeable, and it is thus only a matter of a few seconds to substitute tinted lenses for the plain white one. The Dutch Air Force placed an order for a large number of these goggles not so very long ago, and as these proved so satisfactory, they have now placed a further order.

#### R.A.F. VISIT TO E. G. BROWN & CO.

A PARTY of R.A.F. Officers from Henlow visited the works of E. G. Brown & Co., Ltd., on April 27, in charge of Flt. Lt. C. A. C. Fidler. They were received by Mr. E. G. Brown, and after dividing up into three sections were shown by the directors around their automobile, aircraft, and general sheet metal works. The activities of this company were fully described in FLIGHT for October 2, 1931, and since sheet metal work is rapidly becoming one of the most

important sides of aircraft manufacture, there is little to be surprised about in the fact that all the officers found their visit exceedingly interesting. It is understood that the Officer Commanding the Engineering Course at Henlow has expressed the hope that the visit will become an annual event.

#### ROMANCE

THIS is the title which has been given by Henly's, Ltd., to a booklet issued by them, with a view to giving people some idea of the past history of their premises and their business. Written in the main by Malcolm Mackenzie, this little volume is extremely interesting, and is packed with facts not usually known. For example, we learn that Devonshire House (the present site of Henly's in Piccadilly) was built by one Kent, in 1735, for the Duke of Devonshire. We find also the fact that Gt. Portland Street is the cradle of wireless, as it was there that David Hughes carried out his famous experiments wherein he received audible signals from a transmitting machine at a distance of about 100 yd. The only criticism we have is that enough space is not allowed to that department of this firm, which is destined before long to be the most important—namely, the Aviation Department.

## Book Reviews

*From Cape Town to Clyde. By Richard Humble, with a Foreword by the Master of Sempill. (Longmans, Green & Co.) Obtainable from FLIGHT Office, 5s. 6d. post free.*

SO many books about long-distance flights are now appearing that it requires a novel method of treatment and a novel point of view to recommend any addition to the number. Mr. Humble has certainly provided the novelties in his notebook, as we might call it, about the air route from Cape Town to Renfrew. His object in writing the book was not to describe an adventure, but to show how easy such a flight is, even to pilots with very little experience. Before starting from Cape Town for Renfrew, Mr. Humble, a Scot and an old Fettesian, had been flying for about eight months, and his wife for a still shorter time. Moreover, Mr. Humble is not a man in his first youth; his appearance suggests young middle age. Almost certainly he would have been regarded during the war as past the flying age. Doubtless that made for ripe judgment in his flying, and all the way through his record runs a very sensible disinclination to take avoidable risks. How many of the air tragedies every year are due to the impetuosity of youth!

Having learnt to fly, and, judging by internal evidence in the book, having learnt to fly quite well, Mr. Humble decided to come home from Cape Town in a "Puss Moth," with his wife as second pilot. He was so impressed with the ease of the journey that he is now amazed that so little air touring is being done by owner-pilots. Owners in Great Britain need to enlarge their horizon, he says. The only section of his tour on which the weather seemed to stir his bile was that from Heston to Renfrew, and he writes with some feeling about their first sample of British visibility and "the gloom of an alleged good flying day." He concludes:—"Once get into the habit of thinking of London as merely a refuelling station and not as a destination, and immediately Europe and the blue Mediterranean appear on the wing tip, and the A.A. are but waiting to arrange everything. We all admit that our weather is the worst in Europe, so why not try a better vintage?

Africa itself is no great distance, light planes even now going through to Nairobi every week that we never hear anything about."

The book itself is written very carefully on the lines indicated above. It is certainly not a book of adventure. It is only incidentally an interesting record of travel. In the main it is in the nature of a guide book for the benefit of future airmen who may set out from Cape Town for England, and it may also serve as a set of general principles for pilots flying across any country outside Western Europe. It describes the features of the country over every section of the way, and gives advice as to what to do at almost every point. In particular the remarks about when to follow a road, and what to do when the apparent road comes to an end in the bush, and when it is prudent to tackle clouds in the mountains, or sandstorms over the Sudan, and how to deal with each situation, are particularly valuable. Mr. Humble is evidently not only a very prudent man, but also one with a great power of absorbing information, committing it to memory, and reproducing it for the benefit of those who follow after.

The flight over each section of the route is described, and at the end of each chapter is a list of notes which embody the author's conclusions about that section. This sounds as if the book must be rather dull reading for anyone who is not actually contemplating a Cape-England flight, and if this were so the author could hardly have been blamed. He would still have fulfilled the object for which this book was written. In spite, however, of his strictly businesslike and instructional attitude, the book is an eminently interesting one to read. It is short and pithy, and when one has started it, one finds it hard to put the book down. Obviously, if Mr. Humble ever has any real adventures, he will be able to write a very striking account of them. It is certainly to be hoped that the occasion will never arise, and it is not in the least likely that Mr. Humble will be to blame if it does. In short, this book is one of the most useful pieces of air propaganda which has been written for a very long time.

F. A. DE V. R.



# THE ROYAL AIR FORCE

London Gazette, May 3, 1932

## General Duties Branch

Lieut. H. M. King, R.N., is re-attached to R.A.F. as Flying Officer, with effect from April 18 and with seny. of May 12, 1929. The follg. Pilot Officers are promoted to rank of Flying Officer:—H. J. L. Hawkins (March 12); A. E. Clouston, J. A. Dobson, J. A. C. Forbes, W. H. Husbands, F. R. Newell, H. Pilling (April 10); J. R. S. Agar, E. D. A. Bigg, T. H. Burleigh, T. A. Jefferson, P. W. Johnson, J. N. McAuley, C. P. Villiers (April 12).

Group Capt. E. R. C. Nanson, C.B.E., D.S.O., A.F.C., is placed on half-pay list, Scale A (May 1); Flight Lieut. C. H. Tighe is placed on half-pay list, Scale B (May 1); Group Capt. N. Goldsmith, C.B.E., is placed on half-pay list, Scale A (May 3).

The follg. Lieuts., R.N., Flying Officers, R.A.F., cease to be attached to R.A.F. on return to Naval duty:—J. Brett (April 18); H. D. Barlow, E. H. Shattock (April 22).

Group Capt. C. R. S. Bradley, O.B.E., is placed on retired list at his own request (April 23); Flight Lieut. J. V. Kelly is placed on retired list on account of ill-health (May 4); F/O. C. S. Millar resigns his short service commn. (May 3); P/O. on probation P. E. Woolcombe-Adams relinquishes his short service commn. on account of ill-health (May 4).

## Medical Branch

The follg. are granted short service commns. as Flying Officers for three years on the active list, with effect from April 18 and with seny. of the dates stated:—O. S. M. Williams, M.R.C.S., L.R.C.P. (July 18, 1931); T. A. Hunt, M.B., Ch.B. (July 18, 1931); H. J. Melville, M.B., Ch.B. (April 18). The short service commn. of F/O. V. H. Tompkins, M.R.C.S., L.R.C.P., is ante-dated to April 18, 1931. The short service commn. of F/O. K. L. Raymond, M.B., Ch.M., F.R.C.S. (E.), is ante-dated to May 8, 1931. F/O. V. H. Tompkins, M.R.C.S., L.R.C.P., ceases to be seconded to the Gen. Infirmary, Leeds, with effect from April 18. Sqdn. Ldr. R. E. Bell, M.B., is placed on retired list at his own request (April 23).

## ROYAL AIR FORCE INTELLIGENCE

**Appointments.**—The following appointments in the Royal Air Force are notified:—

### General Duties Branch

**Group Captains:** G. I. Carmichael, D.S.O., A.F.C., to H.Q., Fighting Area, Uxbridge; 29.4.32, on appointment as Officer-in-charge of Administration, vice Group Capt. W. H. Primrose, D.F.C. H. R. Nicholl, C.B.E., to R.A.F. Base, Calshot, 1.5.32, to command, vice Group Capt. E. R. C. Nanson, C.B.E., D.S.O., A.F.C.

**Wing Commander** W. B. Hargrave, O.B.E., to Air Ministry (D.O.S.D.) 29.4.32, for Air Staff duties, vice Wing Com. R. M. Bayley, D.F.C.

**Squadron Leader** F. Fernihough, M.C., to No. 28 (A.C.) Sqdn., Ambala, India, 29.3.32, to command, vice Sqd. Ldr. F. W. Trott, O.B.E., M.C.

**Flight Lieutenants:** R. C. Wilson, to No. 208 (A.C.) Sqdn., Heliopolis, Egypt; 14.4.32. M. M. Freehill, D.F.C., to No. 41 (F) Sqdn., Northolt; 27.4.32. E. S. C. Davis, A.F.C., to No. 41 (F) Sqdn., Northolt; 25.4.32. R. F. Gandy, to No. 3 Flying Training School, Grantham; 29.4.32. D. S. Earp, D.F.C., to No. 99 (B) Sqdn., Upper Heyford; 28.4.32. J. E. G.-H. Thomas, to No. 27 (B) Sqdn., Kohat, India; 19.3.32. F. W. Foster, D.F.C., D.S.M., to Elec. and Wireless School, Cranwell; 2.5.32.

**Flying Officers:** G. F. Whistondale, to Central Flying School, Wittering; 27.4.32. R. J. Cooper, to No. 4 Flying Training School, Abu Sueir, Egypt;

## R.A.F. HONOURS

In the *London Gazette* of May 6, amongst the Honours conferred by His Majesty the King for valuable services rendered in connection with the operations in Southern Kurdistan, Iraq, during the period October, 1930, to May, 1931, and for valuable services in the field in connection with military operations in the North West Frontier of India during the period October, 1930, to March, 1931, the following are announced:

### SOUTHERN KURDISTAN

#### C.B. (Military Division)

Air Commodore Christopher Lloyd Courteney, C.B.E., D.S.O., R.A.F.

#### O.B.E. (Military Division)

Wing-Com. Alfred Guy Roland Garrod, M.C., D.F.C., R.A.F.

#### British Empire Medal (Military Division, for Meritorious Service)

219310 Flt.-Sergt. Trevor Ernest Bond, R.A.F.; 221799 Flt.-Sergt. John Frederick Barleycorn, R.A.F.

#### Air Force Cross

F/O. Paul McKenna Terry.

#### Distinguished Flying Medal

362861 Sergt. (Pilot) Frederick Joseph Chudley.

The names of the following have been brought to notice by Air Vice-Marshal E. R. Ludlow-Hewitt, C.B., C.M.G., D.S.O., M.C., Air Officer Commanding, Iraq Command, for distinguished service rendered during the operations:—

## Air Mails to Africa

THE Postmaster-General, in reply to a question in the House on April 18, stated that since the introduction of the through air mail service to South Africa, the average weekly weight of the outward mail was 310 lb., of which 69 lb. was carried to Egypt, 26 lb. to the Sudan, 114 lb. to Kenya and Uganda, 26 lb. to Tanganyika, 23 lb. to Northern and Southern Rhodesia, and 52 lb. to South Africa.

## Dental Branch

J. E. Willoughby, L.D.S., is granted a non-permanent commn. as Flying Officer, with effect from and with seny. of April 18. Capt. J. T. Waller, M.C. Leicestershire Regt. (formerly seconded to R.A.F.), is permitted to retain the rank of Major on retirement from the Army.

## Erratum

In *Gazette* April 19 for Arthur Thomas Monks read Alfred Thomas Monks.

## ROYAL AIR FORCE RESERVE RESERVE OF AIR FORCE OFFICERS

### General Duties Branch

F/O. R. A. Wills is transferred from Class C to Class A (Feb. 22); F/O. R. H. C. Taylor is transferred from Class A to Class C (April 17); F/O. F. G. Hill is transferred from Class AA (ii) to Class C (Sept. 10, 1931); Flt. Lt. J. C. O. Dickson, D.F.C., relinquishes his commn. on account of ill-health and is permitted to retain his rank (May 4). The follg. Flying Officers relinquish their commns. on completion of service:—H. A. Dinnage (Dec. 12, 1931); R. H. McIntosh (March 18).

### Stores Branch

F/O. W. J. Eagle is transferred from Class C to Class B (April 7).

## Erratum

In *Gazette* of March 29 (*Flight*, April 8, 1932, p. 313), for J. R. McReady read J. R. McCready.

## AUXILIARY AIR FORCE

### General Duties Branch

No. 600 (CITY OF LONDON) (BOMBER) SQUADRON.—Flying Officer E. J. Earnshaw relinquishes his commn. on completion of service (Jan. 25).

No. 602 (CITY OF GLASGOW) (BOMBER) SQUADRON.—E. A. Howell is granted a commn. as Pilot Officer (April 9).

11.4.32. F. C. Cole, to Central Flying School, Wittering; 29.4.32. R. A. Byrne, to Anti-Aircraft Co-operation Flight, Biggin Hill; 27.4.32. W. M. Rankin, to No. 9 (B) Sqdn., Boscombe Down; 27.4.32. A. W. Sandeman, to No. 28 (A.C.) Sqdn., Ambala, India; 4.4.32.

**Pilot Officers:** J. S. Sabine, to No. 6 (B) Sqdn., Ismailia, Egypt; 14.4.32. W. S. Reed, to No. 45 (B) Sqdn., Helwan, Egypt; 13.4.32. M. W. S. Robinson, to No. 60 (B) Sqdn., Kohat, India; 4.4.32.

**Acting Pilot Officer** G. D. M. Blackwood, to No. 3 Flying Training School, Grantham, 25.4.32, on appointment to a Short-Service Commn. as Acting Pilot Officer (on probation).

### Stores Branch

**Flight Lieutenants:** G. C. Wilson, to Marine Aircraft Experimental Estab., Felixstowe; 30.4.32. A. G. Stratford-Tuke, to Station H.Q., Tangmere; 25.4.32.

## NAVAL APPOINTMENTS.

The following appointments have been made by the Admiralty:—

**Lieut. (F/O. R.A.F.)**—H. M. King, reattached to R.A.F., and appointed to *Victory*, for R.A.F. Base, Gosport, for course (April 18).

**Sub-Lieuts.**—H. J. F. Lane, D. D. O'Brien, and B. J. C. Wise, attached to R.A.F. (May 15).

## Royal Air Force

Flt.-Lt. H. H. Brookes, F/O. G. A. E. Harkness, Flt.-Lt. N. Keeble, D.S.O., D.F.C., Flt.-Lt. (now Sqd.-Ldr.) A. P. Ledger, M.B.E., Flt.-Lt. P. S. Mumford, Flt.-Lt. (Hon. Sqd.-Ldr.) V. D. O'Malley, M.C., Flt.-Lt. A. J. Rankin, A.F.C., Flt.-Lt. S. N. Webster, A.F.C., Flt.-Lt. F. Wright, 363804 Corporal T. W. A. Bailey, 365687 AC. 1st class, G. R. Brentnall, 362962 Sergt. (Pilot) F. G. R. Lewis, 364883 L.A.C. C. B. Lindop, 324241 Sergt. (Pilot) S. C. W. Rudd.

## Iraq Army

Capt. J. G. Worth, The King's Regiment (Liverpool).

## NORTH-WEST FRONTIER

### Distinguished Flying Cross

P/O (now F/O) Frederick Francis Wicks.

The names of the following have been brought to notice by General Sir Philip Chetwode, Bt., G.C.B., K.C.M.G., D.S.O., Commander-in-Chief in India, for distinguished services rendered during the operations:—

Sqd.-Ldr. L. O. Brown, D.S.O., A.F.C., Wing-Com. H. Gordon-Dean, A.F.C., F/O G. W. Monk, D.F.C., 364547 L.A.C. A. P. Crowley, 358806 L.A.C. J. W. G. Reader.

## R.A.F. Dinner Club

The 10th Annual Dinner of the R.A.F. Dinner Club will be held at 8.30 p.m. on Friday, June 24, at the Connaught Rooms. Membership of the Club is open to all serving R.A.F. officers, and past officers of the R.A.F., R.F.C., or R.N.A.S. The Honorary Secretary is Flt.-Lt. W. M. Yool, Air Ministry, Kingsway, W.C.2, from whom particulars and forms of application for membership can be obtained.

## Aero Golfing Society

THE Spring Meeting of the Aero Golfing Society was held at the Royal Berkshire Course, Ascot, on April 26. The Challenge Cup, presented by Sir Samuel Instone, was won by A. G. Hazell, who returned a net score of 78. G. F. Roberts and Keigh Davies tied for second place with 81. In the four ball foursomes, A. J. A. Wallace Barr and Major C. J. W. Darwin won with 4 up, G. F. Roberts and H. E. Perrin being second with 2 up.

## AIR POST STAMPS

By DOUGLAS ARMSTRONG

### British "Zeppelin" Mails

The first official mails to be made up by H.M. Post Office for transmission to South America by Zeppelin post were despatched from London on March 20 and April 2, 16 and 30, respectively. Needless to say no special stamps were provided to denote the air post fees, which were fixed at 3s. 6d. per  $\frac{1}{2}$  oz. to Brazil and 4s. to other South American countries, but a variety of distinctive cachets was applied at different stages of the journey, which occupied approximately six days as far as Rio de Janeiro. First, on arrival at Berlin, letters were impressed with a large double-lined circular cachet in red, having an aeroplane device in the centre and inscription "Deutsche Luftpost—Berlin-Friedrichshafen, Anschussflug zur 1 Sud-amerikafahrt des Luftschiffs Graf Zeppelin I." At Friedrichshafen the Zeppelin authorities applied a second cachet in violet, consisting of a small circle showing the two hemispheres and wording "Luftschiff Graf Zeppelin I. Sud-amerikafahrt 1932," whilst Rio de Janeiro provided yet a third cachet depicting *en silhouette* an aeroplane and an airship passing over a palm-fringed coast, with inscription "Servicio Aereo Transatlantico."

### Latest "Zepp" Stamps

Paraguay seems to have been the only country to issue distinctive stamps for franking letters brought to Europe on the return flight of the giant dirigible. Triangular in shape and very roughly printed with a vignette of the *Graf Zeppelin* sailing through the clouds, they comprise in all five denominations, viz., 4 pesos light blue, 8 p. rose-red, 12 p. green, 16 p. purple and 20 p. brown. These were used for the first time on a mail which left Asuncion on March 25 to connect with the Zeppelin at Pernambuco, receiving in addition a diamond-shaped cachet in red and the blue "Servicio Transatlantico" variety described above. The return mail reached England on March 31 last.

### England-Cyprus Air Mail

Another new British air mail service which was put into operation without much preliminary announcement was that connecting London with Limassol (Cyprus). In future this is to be a regular stop on the England-India air route, the first outward mail having left London on April 16. The first air mail flight in the opposite direction was scheduled to take place on April 24 (Limassol-London), but at the time of writing it is not known what special marks or cachets were employed, if any.

### British Air Stamp Needed?

These latest developments in connection with the British air mail service have served to reopen the time-honoured controversy as to the need, or otherwise, for a British air mail stamp. The postal authorities' objection that it would mean carrying extra stocks of stamps at all post offices is surely rather a feeble one in these enlightened and progressive days, and can hardly be offset against the additional revenue they would provide. Let us hope that the Post Office mandarins both at home and in the Crown Colonies will be brought to see the advantages of the innovation and give us a British air mail stamp in the not too distant future.

### Danzig Air Post Exhibition

The ancient and beautiful city of Danzig is to be the venue of the second International Air Post Exhibition from July 23 to 31 of this year. Already a number of the leading air post collections in Great Britain and America have been entered for competition and it is fully anticipated that the show will prove a notable demonstration of the growth of the hobby since the first exhibition of this kind was held in Paris, two years ago. The following experts have promised to represent their respective nations upon the grand jury, viz.: Messrs. R. E. R. Dalwick (Great Britain), Eugene Klein (U.S.A.), A. Beresowski, Dr. M. Kronstein and H. E. Sieger (Germany), F. Muller and J. Pileur (France), D. Emmerich (Switzerland) and W. V. Rachmanow (Poland). Commemorative stamps will be provided by the Danzig Post Office for sale during the week of the Air Post Exhibition only, in the form of contemporary high value postage stamps showing views in and around the Free City distinguished by the overprint "Luftpost—Ausstellung 1932" and surcharged with new values as follow:—10 on 1 gulden, 15 on 2 gld., 20 on 3 gld., 25 on 5 gld. and 30 on 10 gld. A special air mail

flight will also be made by the *Graf Zeppelin* on July 31 to Sweden and back. There are 12 classes of exhibits open to air post collectors of the world, and full particulars, with entry forms, may be obtained from the British Commissioner for the Luposta Exhibition, Mr. R. E. R. Dalwick, 20, Elgin Road South, Bournemouth.

### ANSWERS TO CORRESPONDENTS

**E. N. (Thoune, Switzerland).**—It is no longer possible to procure South and South-West African air mail stamps from the High Commissioner's Office in London. They can only be bought from regular stamp dealers, or by sending remittance to the respective countries. At present they should cost only a small premium upon face value.

**A. J. R. (Halton).**—Glad to know that you were in time to get your covers on the first England-Cyprus flights. As these Notes only appear monthly it is not always possible to give notice of forthcoming services, but I endeavour to do so whenever I can.

### PUBLICATIONS RECEIVED

*An Introduction of Aeronautical Engineering. Vol. I: Mechanics of Flight.* By A. C. Kermode, B.A. London and Aldershot: Gale and Polden, Ltd. Price 8s. 6d. net; by post, 9s.

*Touring the Ancient World with a Camera.* By C. G. Holme and W. Gaunt. The Studio, Ltd., 44, Leicester Square, London, W.C.2. Price 7s. 6d.

*Aeronautical Research Committee Reports and Memoranda. No. 1429. Flow of Compressible Fluid in the Neighbourhood of the Throat of a Constriction in a Circular Wind Channel.* By S. G. Hooker. May 1931. Price 9d. net. No. 1431. *Age-Hardening of Aluminium Alloys.* By M. L. V. Gayler and G. D. Preston. May, 1931. Price 1s. 3d. net. London: H.M. Stationery Office, W.C.2.

*The Pictorial Flying Course.* By Flt. Lt. H. M. Schofield and F/O. W. E. Johns. London: John Hamilton, Ltd. Price 5s.

*Parachute Manual, 1931.* Air Publication 1182. London: H.M. Stationery Office, W.C.2. Price 3s. net.

*An International Air Force.* By J. M. Spaight. London and Aldershot: Gale and Polden, Ltd. Price 5s. net.

### NEW COMPANIES REGISTERED

**AIR LOG COMPANY, LTD.,** 193, Elgin Terrace, W.9.—Capital, £100, in £1 shares. Manufacturers and sellers of any instruments, mechanical devices or tools, to acquire any patent or process relating to the manufacture, working or repair of aircraft and surface and submarine vehicles, &c. Permanent directors: G. Thornton-Norris, 197, Lauderdale Mansions, W.9. H. C. Mayers, Royal Aero Club, Piccadilly, W.1.

**RADAX, LTD.,**—Capital, £100, in £1 shares. Manufacturers and sellers of all instruments, mechanical devices, and tools, &c. The directors and other particulars are similar to those of Air Log Company, Ltd.

**HIGHWAYS HOTELS, LTD.,** 95, Gresham House, E.C.2.—Capital £10,000. Objects: To acquire or establish a chain of aviation hotels, each having its own aerodrome; to carry on business in aerial photography, survey, and private charter of aircraft; to establish flying clubs, etc. 23, Chilworth Street, Hyde Park, W.2. Directors: F. R. Walker and R. E. L. Beere.

### AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motors. (The numbers in brackets are those under which the Specification will be printed and abridged, etc.).

#### APPLIED FOR IN 1930

Published May 12, 1932

- 30,442. J. J. E. SLOAN. Internal-combustion engines of the Diesel or semi-Diesel type. (370,994.)  
33,042. P. N. WILLOUGHBY. Flying machines. (370,892.)

#### APPLIED FOR IN 1931

Published May 12, 1932

- 1,189. H. R. RICARDO. Combustion chambers of i.c. engines of compression-ignition type. (371,025.)  
20,353. GES. FÜR ELEKTRISCHE APPARATE. Position and direction indicator. (371,235.)  
33,722. J. E. BRADLEY. Aeroplane safety device. (371,302.)

### FLIGHT, The Aircraft Engineer and Airships.

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